South Dakota

State Plan for Nutrition and Physical Activity

To Prevent Obesity and Other Chronic Diseases

2010

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Office of the Secretary

SOUTH DAKOTA DEPARTMENT OF HEALTH

Dear Fellow South Dakotans:

The South Dakota Department of Health is pleased to present the 2010 State Nutrition and Physical Activity Plan to Prevent Obesity and Other Chronic Diseases. This is an update for the first plan that was released in 2006. It is a product of a diverse, dedicated group of stakeholders from across the state and builds on the work of the first plan.

The crisis of obesity continues to be a problem in our state as well as nationally and the impact of obesity is felt both individually and as a society. Currently one third of our students and two-thirds of the adults in South Dakota are either overweight or obese. National studies estimate expenditures related to adult obesity now total more than $195 million in South Dakota and preventable deaths associated with obesity are second only to those related to tobacco use. Partners from professional organizations, communities, schools, youth organizations, work places, health care organizations and state government have all worked to implement many of the objectives and strategies of the first plan but the trend has not yet been reversed for this complex problem.

Thank you to the partners who worked to develop this plan and have committed to implementing this plan. Additional partners from healthcare, communities, public agencies, private organizations, businesses, and individuals are needed to solve this problem. I urge you to find areas in this plan where you can join in helping to reverse this health crisis.

Sincerely,

State Plan for Nutrition and Physical Activity

To Prevent Obesity and Other Chronic Diseases

Published March 2010

Doneen Hollingsworth
South Dakota Department of Health, Secretary

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Executive Summary

Overweight and obesity continue to be one of the most important health issues concerning South Dakota and the country today. The impact on the health and economic status of South Dakota residents is alarming. The prevalence of overweight and obesity among South Dakota adults and children less than five years old is higher than the national average.[1,2] A study completed by Emory University projects that by 2018, obesity will surpass 50% of the adult population in South Dakota with corresponding health spending at over $1 billion.[3] It is time to assess the impact the environments in our schools, workplaces, health care settings, homes, and communities have on obesity and to implement effective strategies to ensure these conditions improve.

According to the Behavioral Risk Factor Surveillance System (BRFSS), many South Dakota adults are overweight or obese, are not practicing healthy living behaviors, and have developed health problems or chronic diseases:

- 65.0% are overweight or obese;[1]
- 52.2% report less than 30 minutes of moderate physical activity per day;[4]
- 81.4% consume less than five servings of fruits and vegetables per day;[4]
- 72.7% watch 2 or more hours of TV per day;[4]
- 6.6% have diabetes;[1]
- 25.5% have high blood pressure;[4] and
- 34% have high cholesterol.[4]

Likewise, the data for children and youth show the same trends for the next generation, as is represented in the 2007 Youth Risk Behavior Survey and the 2008-2009 School Height and Weight Report:

- 17% of children aged 5-19 are overweight;[5]
- 16.6% of children aged 5-19 are obese;[5]
- 16% of youth in grades 9-12 consume 5 or more servings of fruits and vegetables per day;[6]
- 44% of youth in grades 9-12 were physically active for at least 60 minutes per day;[6] and
- 25% of youth in grades 9-12 watched 3 or more hours of TV per day.[6]

While the obesity and overweight rates for children aged 5-19 have been relatively level for the past few years, all of the above data indicate the need for implementation of effective strategies to reduce the prevalence of overweight and obesity in South Dakota.

In 2006, the first *South Dakota State Plan for Nutrition and Physical Activity to Prevent Obesity and Other Chronic Diseases* was released. The stakeholders implemented many strategies from this plan with positive results. In 2009, the Department of Health's Healthy South Dakota (HSD) Program brought together a diverse group of stakeholders to review the 2006 plan and design, implement, and evaluate strategies for an additional five years. The end result is this plan for 2010-2015 which builds upon the original plan to address the problem of overweight and obesity and the subsequent risk for chronic diseases such as cardiovascular disease, hypertension, and diabetes. The plan focuses on education, public outreach, and policy and environmental changes. The five target areas identified for implementation are: Parents and Caregivers, Schools and Youth Organizations, Workplace, Community, and Health Care.

The stakeholders identified the following key goals for the State Plan:

- Provide healthy environments for children that promote physical activity and healthy eating.
- Provide opportunities for youth to learn and practice skills which lead to a lifetime of physical activity and healthy eating.
- Promote healthy lifestyles and reduce chronic disease in South Dakota workplaces through physical activity and healthy eating.
- Promote healthy lifestyles and reduce chronic disease in South Dakota communities through physical activity and healthy eating.
- Increase support for physical activity and healthy eating within South Dakota health care systems and among health care providers in order to achieve a healthy Body Mass Index (BMI) for all South Dakotans.

The State Plan is meant to be a road map for stakeholders and other organizations, agencies, and interested individuals. Various partners signed on to take leadership roles in implementing this plan, but additional organizations, communities, businesses, and individuals are needed to implement this plan and reduce overweight and obesity in South Dakota.

Introduction

The South Dakota Department of Health and its partners are pleased to release the second edition of the State Plan for improving nutrition and physical activity. The first plan was published in 2006. The current plan was developed to continue addressing the problem of overweight and obesity in South Dakota and the subsequent increased risk of chronic diseases such as cardiovascular disease, high blood pressure, and diabetes. Once again, stakeholders from across the state collaborated to develop the plan.

Planning Process

In 2009, the South Dakota Department of Health's (SDDOH) Healthy South Dakota Program requested assistance from its stakeholders to update and revise the State Plan. The first plan spanned the period of 2006 – 2010. The objectives and strategies in the initial plan were implemented by many stakeholders statewide. The purpose of the plan is to comprehensively develop objectives and strategies to prevent obesity and other chronic

diseases by addressing two closely related factors – poor nutrition and inadequate physical activity. The stakeholders met face-to-face on two occasions during the Fall of 2009 to discuss and develop the objectives and strategies. Final recommendations and approval of the plan were completed by email.

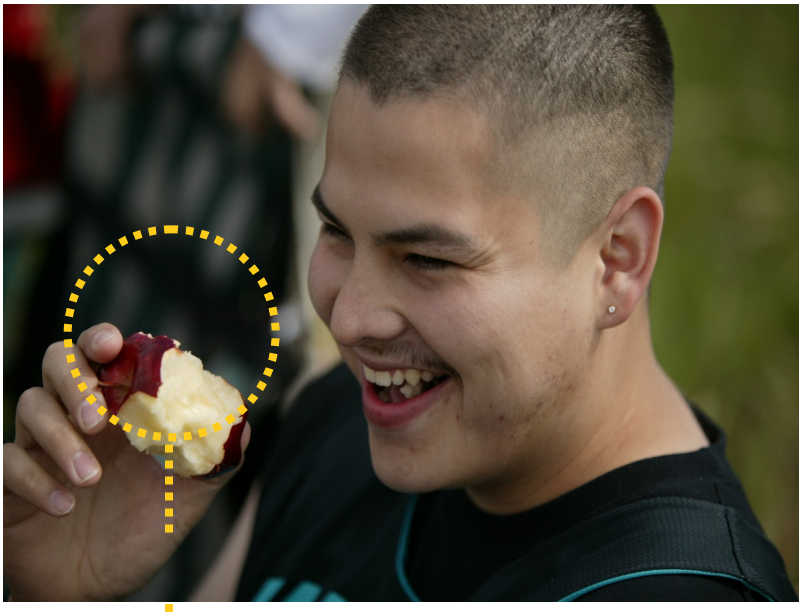
The objectives and strategies described in the plan address issues that were determined to be priorities for South Dakota. The stakeholders analyzed available data sources and results from current objectives to determine target populations. Within each of these target populations, stakeholders were asked to develop SMART (Specific, Measurable, Achievable, Realistic, and Time-Specific) objectives and strategies. For each target population, the objectives were prioritized and the strategies include science-based nutrition and physical activity interventions. These strategies are focused on environmental and policy changes to encourage individual change.

Organization of the Plan

The stakeholders chose to retain the five target populations identified in the original plan – parents and caregivers, schools and youth organizations, workplace, community, and health care. The approach for parents and caregivers involves strategies that provide environments for healthy eating and physical activity for children and adolescents. South Dakota children spend significant quantities of time with other caregivers such as child care providers, so many of the interventions target these individuals and organizations. Within schools and youth organizations, South Dakota intends to provide technical assistance and training to help schools maintain or improve their physical education and nutrition education courses; provide resources to youth organizations to implement science-based strategies; and encourage schools to provide healthy food and beverage options in and outside of meal service. The

objectives for the workplace center on training and supporting worksite wellness consultants and developing workplace wellness programs that promote a healthy environment for physical activity and nutrition. In communities, the focus is developing model wellness policies for physical activity and nutrition that include environmental and policy changes. The stakeholders also chose to target health care, including both providers and health care systems. The objectives include continuing education opportunities for providers and partnering with insurance providers to expand coverage for nutrition counseling. In terms of evaluation, a data source was identified to measure the effectiveness of each objective.

Next Steps



This plan is meant to be a living document for the stakeholders and other organizations, agencies, and individuals interested in implementing these physical activity and nutrition strategies. In order to successfully implement the plan, additional partners may be identified. One important factor for improving the success of implementation of the plan is involvement from both state and local partners. While the strategies are broad and will require state level involvement, local partners should also consider how best to implement these objectives and strategies within their community and target group.

Understanding the Challenge

How Did We Get Here?

To examine and understand the issue of overweight and obesity, we need to look at the history and socio-economic changes that our society has experienced over a period of decades.

All aspects of life in the past few centuries have evolved dramatically. The growing, processing, and distribution of food has provided more access to meat, dairy products and high fat food. The movement away from an agricultural society to one of a more sedentary, technological, and service-oriented job sector has provided employees with jobs requiring less physical exercise. Television and mechanized transportation, admittedly wonderful technologies, have caused generations of Americans to be less active. Convenience stores and fast-food restaurants make high-calorie foods in portion sizes that are too big readily available. “American society has become 'obesogenic,' characterized by environments that promote increased food intake, nonhealthful foods, and physical inactivity.”[7]

There are a variety of factors that contribute to overweight and obesity. Behavior, environment, and genetic factors may all have an effect in causing people to be overweight and obese. Overweight and obesity result from an energy imbalance. This involves eating too many calories and not getting enough physical activity, behavioral choices that can contribute to overweight and obesity. Communities, homes, and workplaces can influence people's health decisions. People make decisions based on their environment and community. A person may choose not to walk to the store or to work because of a lack of sidewalks. Due to this influence, it is important to create environments that make it easier to engage in physical activity and to eat a healthy diet. Science shows that genetics plays a role in obesity. Genes can directly cause obesity in certain disorders; however genes do not always predict future health. Genes and behavior may both be needed for a person to be overweight. In some cases multiple genes may increase one's susceptibility for obesity but other factors are also required such as abundant food supply or little physical activity.[8] The outcome of overweight and obesity is likely a combination of all these factors.

Defining Overweight and Obesity

According to the Centers for Disease Control and Prevention (CDC), overweight and obesity are both labels for ranges of weight that are greater than what is generally considered healthy for a given height. The terms also identify ranges of weight that have been shown to increase the likelihood of certain diseases and other health problems. For adults, children, and adolescents, overweight and obesity ranges are determined by using weight and height to calculate a number called the "body mass index" (BMI). BMI is now the most widely accepted method used to screen for overweight and obesity. It is used because it if fairly easy to obtain height and weight measurements, the measurements are non-invasive, and for most people it is a reliable indicator of total body fat. True adiposity however must be determined by other

methods.[9] For adults, overweight is defined as a Body Mass Index ranging from 25.0 to 29.9 and obesity is a Body Mass Index of 30.0 and higher.

For children and adolescents (aged 2–19 years), the BMI value is plotted on the CDC growth charts to determine the corresponding BMI-for-age percentile.

- Overweight is defined as a BMI at or above the 85th percentile and lower than the 95th percentile.
- Obesity is defined as a BMI at or above the 95th percentile for children of the same age and sex.[10]

A child's weight status is determined based on an age- and sex-specific percentile for BMI rather than by the BMI categories used for adults. These classifications of overweight and obesity are used because children's body composition varies as they age and varies between boys and girls.[10]

Body Mass Index (BMI)

The Body Mass Index can be calculated using a person's weight in pounds and height in inches with this equation:

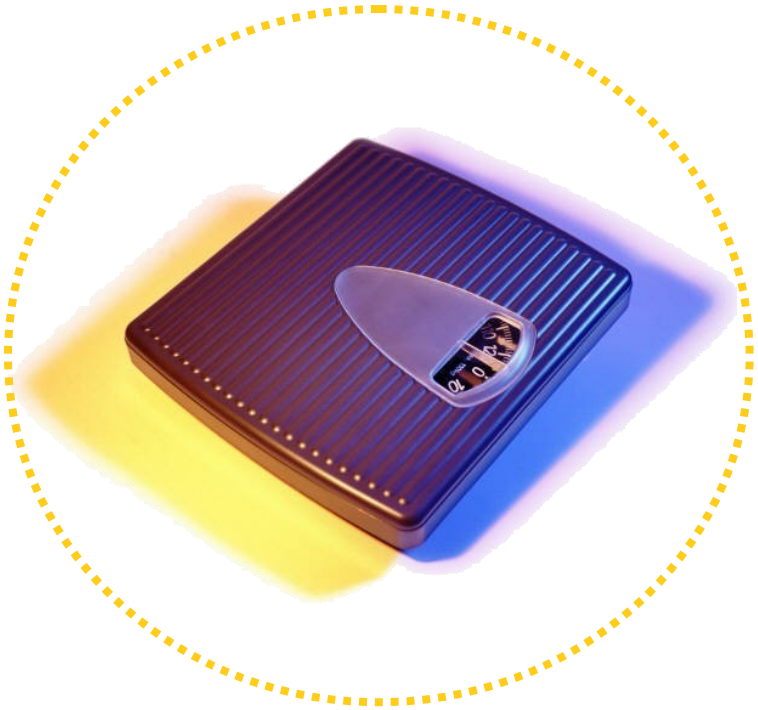
$$BMI = \frac{\text{Weight in Pounds}}{(\text{Height in inches})^2} \times 703$$

$$\frac{175 \text{ lbs}}{(69 \text{ in} \times 69 \text{ in})} \times 703 = 25.8$$

An adult who weighs 175 pounds and is 5 feet 9 inches tall has a BMI of 25.8. This is considered overweight.

Weight Status	BMI for Adults	BMI-for age for Children and Adolescents
Under-weight	Below 18.5	Less than 5th Percentile
Healthy Weight	18.5 – 24.9	5th Percentile to less than 85th Percentile
Over-weight	25.0 – 29.9	85th to less than 95th Percentile
Obese	30.0 and Above	Equal to or greater than 95th Percen-tile

The Body Mass Index is a research-based method recommended by CDC to use in making a determination of body weight for children, adolescents, and adults relative to potential health risks. However, the BMI is not the only indicator of health risk for overweight or obesity. The National Heart, Lung, and Blood Institute (NHLBI) guidelines recommend looking at two other predictors for adults as well when assessing the likelihood of developing overweight- or obesity-related diseases. The first is waist circumference. This is an important measurement regardless of BMI because abdominal fat is a predictor of the risk for developing risk factors for heart disease and other diseases. The risk increases with a waist measurement of over 40 inches in men and over 35 inches in women. Second, are other risk factors an individual has for diseases and conditions associated with obesity for example, high blood pressure, physical inactivity, high LDL cholesterol, and low HDL cholesterol.[11] The Institute's website http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/risk.htm offers the assessment for those interested in learning more about overweight and obesity as they relate to health risk factors.



Where Are We Headed?

According to BRFSS data, 65.0% of South Dakota adults are overweight or obese. The obesity rate for South Dakota adults rose by 12% from 1993 to 2008.[1] And our children are in danger as well. The 2008-2009 South Dakota School Height and Weight Report shows

that 33.6% of children ages 5-19 are overweight or obese.[5] Although the prevalence of obesity is still high, new data suggests that the rate of increase for obesity in the U.S. in recent decades may be slowing.[12] The South Dakota School Height and Weight Report also shows a trend of leveling off for children.

The consequences of obesity are physical, psychological, and social for adults and children. Children are developing obesity-related diseases that were once only seen in adults.[13] In South Dakota, there are ten counties with more than 8.5% of their residents estimated to have diabetes according to the CDC National Diabetes Surveillance System.[14] These rates are some of the highest in the nation. All of these counties except one are within a Native American reservation. All ten of these counties and several others also have estimates greater than 31% of adults who are obese.

The Health Consequences of Obesity

- Coronary heart disease
- Type 2 diabetes
- Cancer (endometrial, breast, and colon)
- Hypertension (high blood pressure)
- Dyslipidemia (high total cholesterol or high levels of triglycerides)
- Stroke
- Liver and gallbladder diseases
- Sleep apnea and respiratory problems
- Osteoarthritis (degeneration of cartilage and underlying bone within a joint)
- Gynecological problems (abnormal menses, infertility)[13]

So where and how do we fashion solutions? Policy and environmental change initiatives that make healthy choices in nutrition and physical activity available, affordable, and easy will likely prove most effective in combating obesity. Looking to sociology models of human behavior help to explain how individuals make choices and break habits. Looking beyond the individual to society and how its environmental and social policies affect human behavior may also hold the key.

The Socio-Ecological Model

The physical and social environments in which people live, work, and recreate play a major role in influencing individual behavior. The Socio-Ecological Model focuses upon the larger universe of influences on human behavior and holds promise in addressing the problem of societal overweight and obesity. It offers strategies for potential changes at various levels. This model explains how lifestyle choices are ultimately individual choices, but these choices are made in the midst of the individual's overall environment.

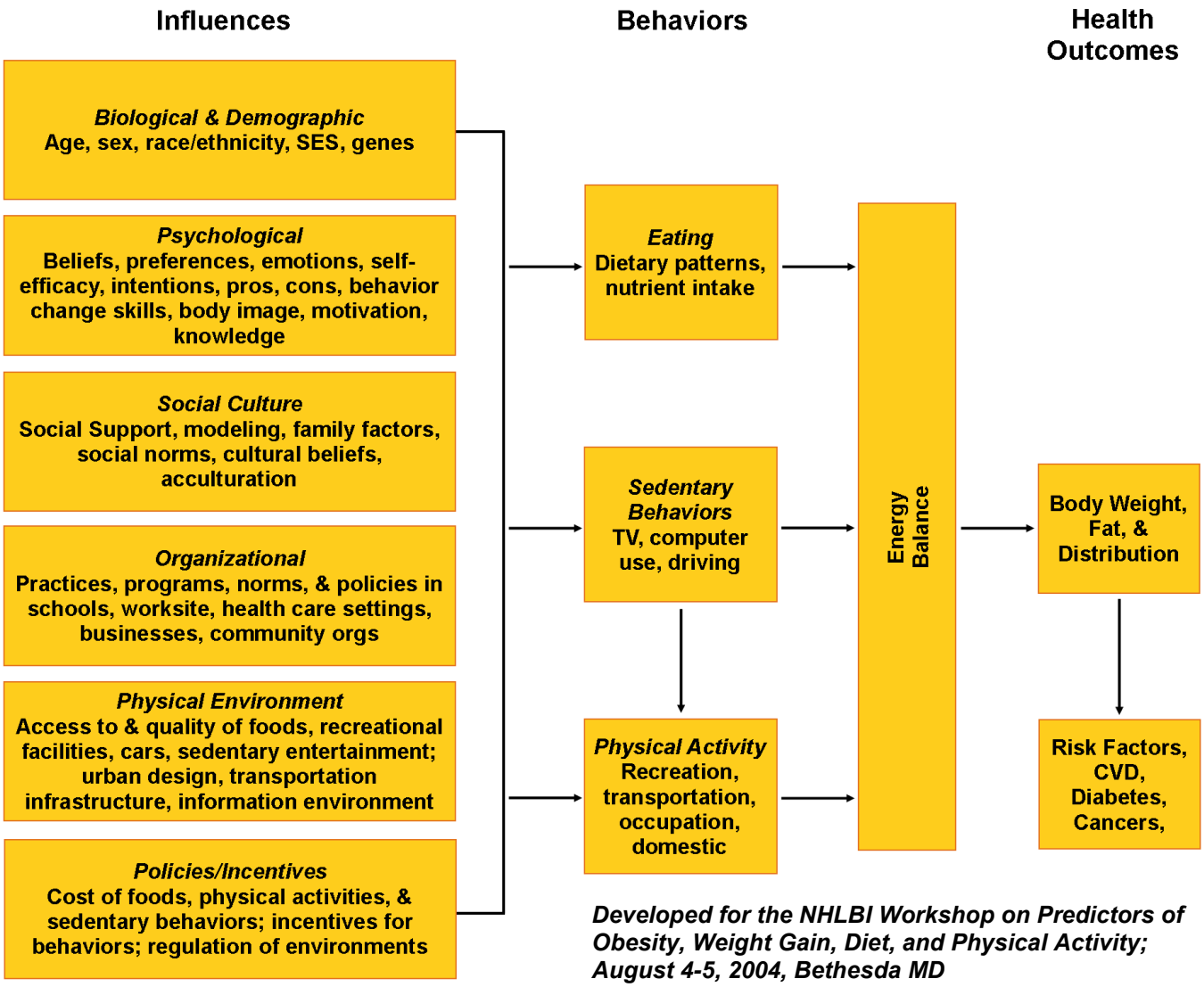
The Socio-Ecological Model focuses on the opportunities for successful environmental interventions, and turning those into lifestyle changes:

- How do we motivate the **individual**?
- How can we interact with **families and peer groups** to provide supports to the individual?

- How can our **institutions**, **schools, religious groups, and businesses** play a role in promoting healthy choices?
- Can coordination of **community** groups offer answers?
- Where and how far do we take **public policy** to solve these lifestyle choice issues?

A good example of public policy change is demonstrated in projects throughout the country that integrate neighborhoods of homes and businesses to encourage walking and bike riding to schools and the workplace.

An Ecological Model of Diet, Physical Activity, and Obesity



Developed for the NHLBI Workshop on Predictors of Obesity, Weight Gain, Diet, and Physical Activity; August 4-5, 2004, Bethesda MD

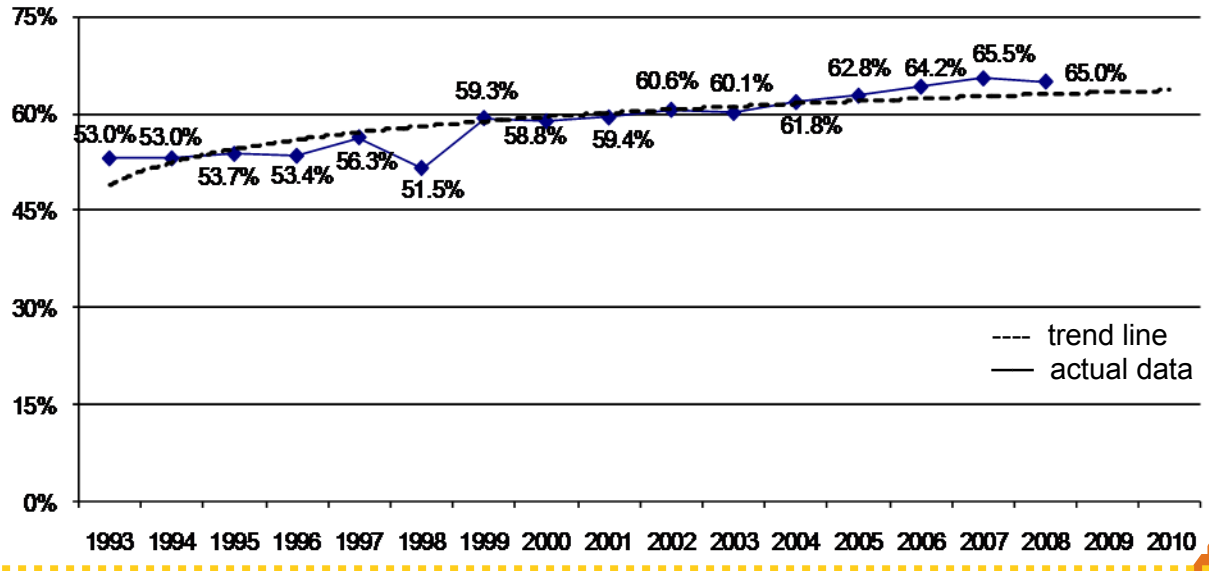
Using the Socio-Ecological Model as a guide for interventions, South Dakota has identified and will implement objectives and strategies that can influence individual attitudes as well as behaviors in larger populations. Strategies were formulated to encourage South Dakotans to make healthy lifestyle changes. Other strategies provide a broader scope to assist in changing environment and policy in schools, communities, workplaces, and the health care arena.

Burden of Overweight and Obesity

Prevalence of Overweight and Obesity

Overweight in the Behavioral Risk Factor Surveillance Survey (BRFSS) is reported as a BMI of 25.0 or above, which includes obese (30.0 or above). In South Dakota, the percentage of overweight adults has increased from 53.0% in 1993 to 65.0% in 2008 (Figure 1). This equates to a 12 percentage point increase in 15 years. The percentage of adult South Dakotans who are overweight is slightly higher than the national average of 63.4%. The 2008 BRFSS shows that a significantly higher percentage of males are overweight than females (73.4% vs. 56.2%), and Native American females (70.7%) report a significantly higher prevalence of overweight than do white females (55.6%).[1]

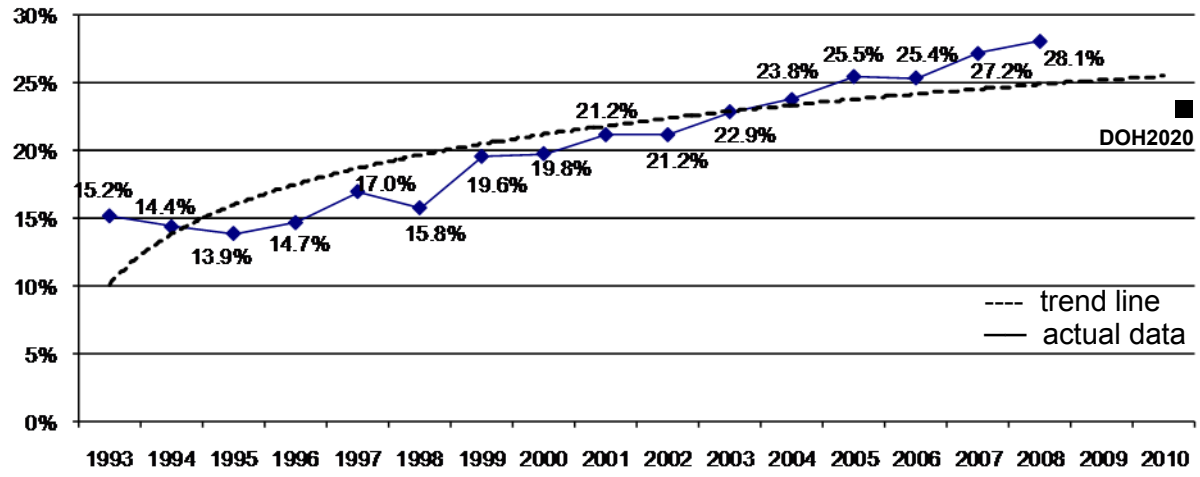
Figure 1
Percent of Respondents Who Are Overweight Based on Body Mass Index, 1993-2008



In South Dakota, 87.6% of respondents who have diabetes are overweight or obese; 79.6% of respondents who have hypertension are overweight or obese; and 76.2% of respondents who have high blood cholesterol are overweight or obese.[1,4]

In South Dakota, 28.1% of adults were obese according to the 2008 BRFSS (Figure 2). Those individuals with diabetes (59.0%), hypertension (39.3%), and high blood cholesterol (34.5%) experience higher rates of obesity according to the 2007 and 2008 BRFSS. Native Americans report a significantly higher prevalence of obesity than do whites (38.4% versus 27.7%). South Dakota is slightly above the national median of 26.7%.[1] The South Dakota Department of Health (SDDOH) 2020 Initiative objective is to reduce the prevalence of obesity in adults to 23.0%.[15]

Figure 2
Percent of Respondents Who Are Obese Based on Body Mass Index, 1993-2008



Obesity has long been thought of as a chronic disease of adults only, but it is becoming an increasing problem for children and adolescents. In 1998, South Dakota began collecting height and weight data for school-age students. Each year since then, 110 - 276 schools have voluntarily submitted measurements on K-12 students and this currently represents 29.3% of students. Data from the 2008-2009 school year showed 16.6% of the

students met the definition of obese and an additional 17.0% were overweight, for a total of 33.6% of South Dakota students. Overall, there has been an increase in the obese category from 15.1% in 1998-1999 to 16.4% in 2004-2005 to 16.6% in 2008-2009. By race, Native American children have the highest rates of overweight and obesity. The obese category among Native American students increased from 21.1% in 1998-1999 to 26.1% in 2004-2005 to 26.4% in 2008-2009.[5]

The SDDOH has collected Pediatric Nutrition Surveillance System (PedNSS) data from participants of the SDDOH Women, Infants and Children (WIC) Program since 1995. PedNSS overweight rates for 2-5 year olds have increased from 18.1% in 2005 to 19.7% in 2008 and obesity rates have increased from 13.9% in 2005 to 16.2% in 2008.[2]

Modifiable Risk Factors

In general, overweight and obesity result from an energy imbalance. Increased physical activity is one proven strategy that can impact the balance of caloric intake with expenditure. According to the 2007 BRFSS, 52.2% of South Dakota adults report doing less than 30 minutes per day of moderate physical activity, or less than five days per week of moderate physical activity which is poorer than the nationwide average of 50.5%.[4]

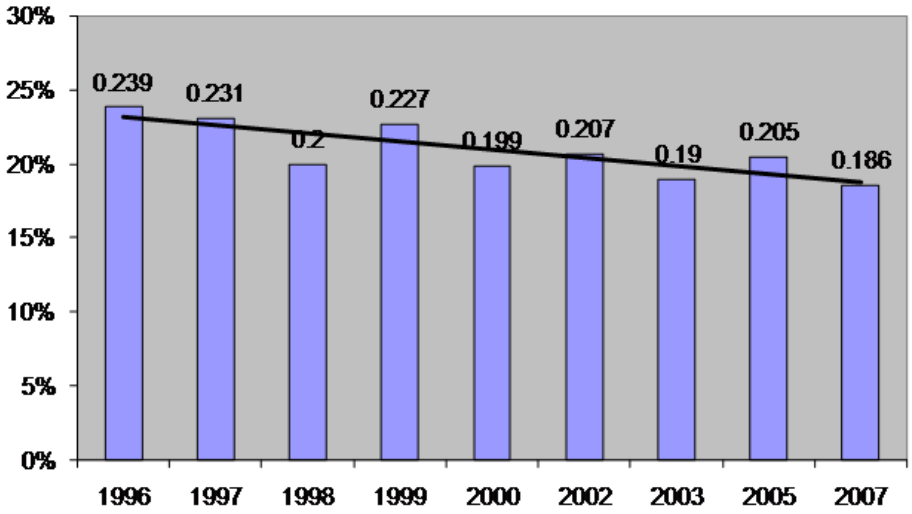
Of those adults who reported fair or poor health status, 68.0% participated in less than 30 minutes of moderate physical activity per day. The national average of those who reported having no vigorous physical activity was 71.7%. At 74.6%, South Dakota was significantly worse than the national average.[4]

Regarding the amount of physical activity in which high school students engaged, a mere 28% of South Dakota grade 9-12 students attended a physical education class one or more days in an average school week. Of those students who were enrolled in a physical education class, 88% stated that they exercised or played sports more than 20 minutes during an average physical education class.[6]

In relation to inactivity, 24.0% of high school students watched three or more hours of television per day on an average school day, while 17% played video or computer games or used a computer for something that was not school work for three or more hours per day.[6] According to the 2007 BRFSS, 72.7% of South Dakota adults watched two or more hours of television on an average weekday.[4]

Consumption of fruits and vegetables is another risk factor for which South Dakotans are falling short. The National Cancer Institute and CDC have set the goal that 75% of children over the age of two and adults should consume at least five servings of fruits and vegetables per day. South Dakota is significantly worse than the United States (24.4%), with only 18.6% of adults indicating that they consume the minimum of five servings of fruits and vegetables per day according to the 2007 BRFSS (Figure 3). Fruit and vegetable consumption varied slightly among gender, age, income, employment, and marital status.[4] According to the 2007 YRBS, only 16% of high school students had eaten five or more servings of fruits and vegetables per day during the past seven days.[6]

Figure 3
South Dakotans That Eat At Least 5 Servings of Fruits and Vegetables



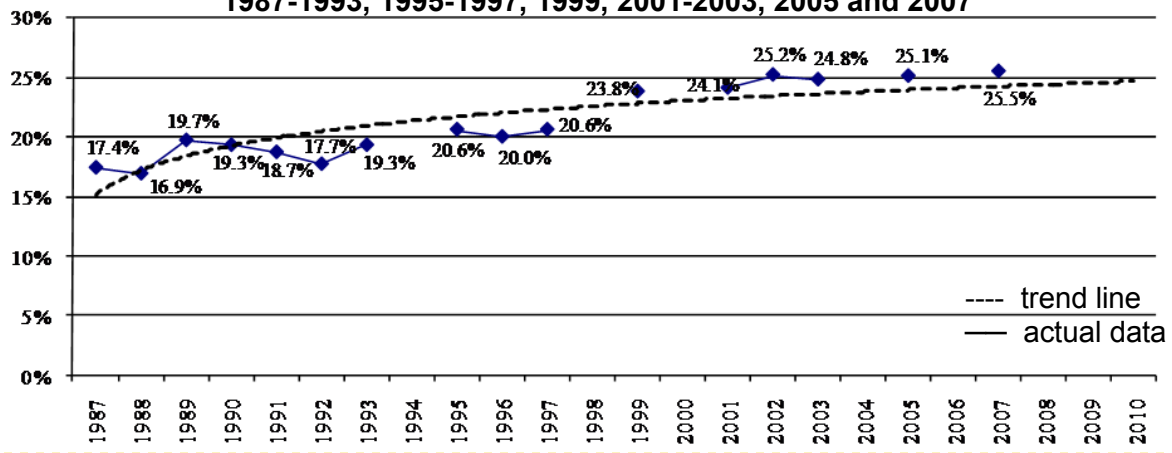
An additional strategy to reduce obesity in children is breastfeeding. The Healthy People 2010 Objectives are to increase breastfeeding initiation to 75%, duration of six months to 50%, and duration of 12 months to 25%. The 2008 National Immunization Survey (NIS) for infants born in 2006 reported 76.8% of South Dakota infants were ever breastfed. NIS data also reported 47.5% of South Dakota infants were breastfed at least 6 months and 22.1% were breastfed at least 12 months.[16]

Chronic Diseases and Mortality

Obesity increases the risk of chronic diseases, such as hypertension, dyslipidemia, coronary heart disease, stroke, type 2 diabetes, and colorectal, breast, and prostate cancer. The leading causes of death in South Dakota in 2008 were heart disease (23.8%) and cancer (22.1%) which both have dietary and physical activity risk factors. Heart disease was the leading cause of death in South Dakota for men (25.1%) and women (22.4%). According to the 2008 South Dakota Vital Statistics Report, the Years of Potential Life Lost due to premature deaths from these chronic diseases are as follows: heart disease (6,573) and cancer (9,886).[17]

Prehypertension is a blood pressure measurement that is higher than normal, but not yet in the high blood pressure range. The blood pressure range for prehypertension is 120-139/80-89 mmHg. Having prehypertension raises a person's risk for high blood pressure. Hypertension, or high blood pressure, is a reading of 140/90 mmHg or higher for persons without risk factors. For those with risk factors, the recommended levels are lower. High blood pressure causes the heart to work harder which can cause the heart to enlarge, blood vessels in the kidney to narrow and arteries to harden. Almost 40% (39.3%) of obese adults in South Dakota have been told by a health professional that their blood pressure is high as compared to 25.5% of all respondents according to the 2007 BRFSS (Figure 4). Overall, the percent of South Dakota adults who have hypertension has been increasing since 1987 (Figure 4).[4] High blood pressure is often called the "silent killer" because there are usually no symptoms until there is a problem with the heart, kidneys or brain. High blood pressure usually lasts a lifetime once it develops, but it can be treated and controlled.

Figure 4
Percent of Respondents Who Were Told They Have Hypertension, 1987-1993, 1995-1997, 1999, 2001-2003, 2005 and 2007

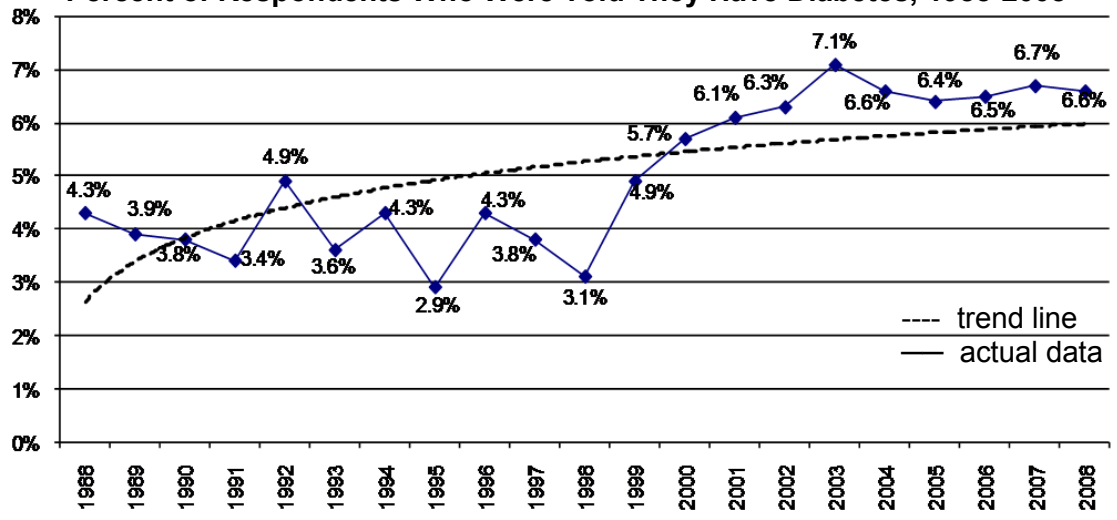


High blood cholesterol occurs when there is too much cholesterol (fat-like substance) in the blood. When the cholesterol level is high, the risk of heart disease or heart attack increases. A total cholesterol value of less than 200 mg/dL is desirable. For persons with risk factors, the recommended level is lower. Other factors include the HDL (good) and LDL (bad) cholesterol levels. An HDL level greater than 60 mg/dL is recommended and can help to lower the risk for heart disease. An LDL level of less than 100 mg/dL is optimal.

The percent of South Dakotans who have high blood cholesterol has been increasing overall since the question was first asked in 1987. Although South Dakota (34.0%) is better than the nation (37.6%) for respondents who were told they have high blood cholesterol, a substantial number of those individuals with hypertension and/or diabetes also had high blood cholesterol.[4] Thus, there are a number of South Dakotans living with multiple chronic diseases.

Diabetes mellitus is a disease in which the body does not produce or properly use insulin. Insulin is a hormone that is needed to convert sugar, starches and other food into energy needed for daily life. There are unmodifiable risk factors for the development of diabetes such as genetics and old age. Modifiable risk factors include obesity and lack of physical activity. There are four main diagnoses associated with diabetes: type 1, type 2, gestational, and prediabetes. Type 1 results in the body's inability to produce insulin. The CDC indicates that only 5-10% of all people diagnosed with diabetes have type 1. Type 2 diabetes results from insulin resistance combined with relative insulin deficiency. In 2008, 6.6% of South Dakota adults had been told that they have diabetes unrelated to pregnancy (gestational diabetes) (Figure 5).[1]

Figure 5
Percent of Respondents Who Were Told They Have Diabetes, 1988-2008



Prediabetes occurs when a person's blood glucose levels are higher than normal but not high enough for a diagnosis of diabetes. Studies have shown that people with pre-diabetes who lose weight by increased physical activity and a healthy diet can prevent or delay the development of type 2 diabetes. The Diabetes Prevention Program, a nationwide prevention study of people at high-risk for diabetes, showed a 5-7% weight loss decreased the number of new cases of type 2 diabetes by 58%, 3 years after the weight loss.[18]

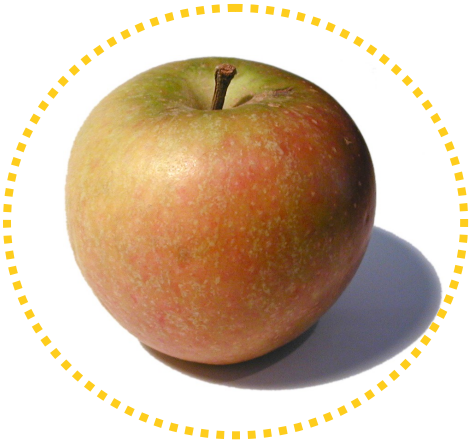
Some significant differences in demographics have also been identified in the 2008 BRFSS for those who have diabetes. The incidence of diabetes increases as age increases. Native Americans (13.5%) demonstrate a much higher prevalence of diabetes than whites (6.3%).[1] The prevalence of diabetes generally decreases as household income and education levels increase.

Economic Impact

Obesity and overweight have considerable impact on the health care system both from direct and indirect costs, according to the CDC. Direct health care costs are those associated with physician visits, tests, hospital care, and preventative, diagnostic, and treatment services. Indirect costs are those such as income lost due to absenteeism, restricted activity, decreased productivity, and the value of future income lost to premature death. In one study, the estimated adult obesity expenditure for South Dakota was $195 million in 2000.[19] Almost half of these costs were paid by Medicare and Medicaid. The author of that study reported in the July 27, 2009 Journal of Health Affairs that now nearly 10 percent or $147 billion of the nation's health care spending can be attributed to obesity.[19]

Guiding Principles

Science-Based Strategies



According to the Centers for Disease Control and Prevention's State Nutrition, Physical Activity and Obesity (NPAO) Program Technical Assistance Manual, the following strategies should be included in programs intended to prevent and control obesity and other chronic diseases, and the HSD Program and stakeholders agree. The CDC indicates that because the problem of obesity is so widespread across the United States, prevention efforts should use public health population-based approaches including coordinated policy and environmental changes that affect large numbers of different populations simultaneously.[20] A short explanation of the six principal target areas for which CDC recommends development of nutrition and physical activity interventions for controlling obesity and other chronic diseases follows:

Increase Physical Activity

Regular physical activity helps maintain good health across the lifespan. Physical activity can reduce the risk of overweight and obesity and chronic diseases such as cardiovascular

disease, colon cancer, diabetes, and high blood pressure. Despite these benefits, South Dakotans report engaging in moderate physical activity less than the national average and less than the amount recommended.[4] There is also cause for concern for adolescents. In 2007, only 44% of South Dakota students were physically active for at least 60 minutes per day during 5 or more days per week.[6] Barriers to individuals include lack of time, energy, motivation, resources, supportive social environments, concerns about injury, and health problems. Community barriers for physical activity include lack of access to quality recreational facilities and pedestrian and bicycle infrastructure.[20] Interventions to address these issues should be multi-component and take into consideration resources, needs, priorities, and constraints.

Increase Consumption of Fruits and Vegetables

Fruits and vegetables contain essential vitamins, minerals, fiber, and other compounds that may help prevent many chronic diseases. Fruits and vegetables are also relatively low in calories per volume of food because of their high fiber and water content; thus, they are low in energy density. Substituting fruits and vegetables for higher-energy-dense foods can be part of a successful weight management strategy.[20] Despite the evidence supporting the health benefits of consuming fruits and vegetables, the BRFSS shows that South Dakotans follow this recommendation significantly less than the national average, and again, less than guidelines recommend.[4] Environmental and policy strategies can address barriers such as access, availability, and cost of fruits and vegetables.

Decrease Consumption of Sugar-Sweetened Beverages

A large proportion of added sugar in the American diet comes from the consumption of sugar-sweetened beverages. Soft drink intake has increased dramatically over the past few decades and while some of this is attributed to access at schools and restaurants, data shows that the home is where most children and youth obtain carbonated soft drinks and other sugar-sweetened beverages.[20] Potential health problems associated with high intake of sugar-sweetened beverages include weight gain, displacement of milk consumption which can contribute to reduced calcium intake, and dental caries and potential enamel erosion. While evidence supports the correlation between consumption of sugar-sweetened beverages and increased caloric intake and weight gain, interventions have had varying success.[20] Any interventions should include changes in the home, school and other environments.

Increase Breastfeeding Initiation and Duration

Research shows that the longer a child breastfeeds, the less likely he/she is to be overweight. Exclusive breastfeeding seems to have a stronger protective effect than breastfeeding combined with formula feeding. Breastfeeding has also been shown to protect against several childhood illnesses.[20] Despite this evidence, far too few infants are breastfed and duration is shorter than recommended. The 2008 National Immunization Survey for South Dakota infants born in 2006 reported that 76.8% were breastfed. NIS data also reported 47.5% of South Dakota infants were breastfed at least 6 months and 22.1% were breastfed at least 12 months.[16] There are a number of

Barriers that make it difficult for mothers to breastfeed. Mothers often do not receive the support that they need from health care professionals. When mothers choose to work, not all employers and coworkers are supportive and mothers face difficulties in finding the time and a place to express milk for their infant while at work. The acceptance of breastfeeding in public is also often low.[20] Strategies should be developed in several venues including individualized support, education for health care professionals and facilities, public education, and workplace policies.

Reduce the Consumption of High-Energy-Dense Foods

Foods with a lower-energy-density provide fewer calories per gram than foods with higher- energy-density. Examples of lower-energy-dense foods are fruits, whole grains, and vegetables. These foods tend to have either a high water content, high fiber, or little fat. High-energy-dense foods are often high in refined grains, added sugar, and fats. These foods tend to taste good, are inexpensive and convenient. Research shows that people typically eat the same amount of food on a day-to-day basis. This is not dependant on the number of calories in the food.[20] Therefore, the number of calories in a certain amount of food impacts the total number of calories that a person consumes. Several studies suggest that a relationship exists between consuming energy-dense foods and obesity. Simply put, weight gain occurs when energy intake (caloric intake) exceeds energy expenditure. Suggested interventions include limiting the availability of high-energy-dense foods, improving the availability of healthful food choices, and changes in menu options and portion sizes.[20]

Decrease Television Viewing

Watching television is a common sedentary activity among American children and adults. In South Dakota, 72.7% of adults watch 2 or more hours of television each day.[4] The South Dakota YRBS indicates that 24% of adolescents watch 3 or more hours of TV during an average school day.[6] Studies have found an association between the number of hours children and adults watch television and the prevalence of overweight and obesity.[20] There are several reasons for this. Television viewing may replace physical activity and may also reduce metabolic rate. Caloric intake may increase while watching television and exposure to high-energy-dense foods via marketing is highly likely. There are also several barriers to reducing television time. Most children and adults enjoy watching television and don't perceive the amount of time they watch as a problem. Reducing TV time would require parents to find alternative activities for their children and require parents to change their own TV-viewing behavior. School-based interventions and parental strategies should focus on limiting TV-viewing time.[20]

Disparities

South Dakota is a unique state with unique needs. First, South Dakota is one of the most rural of all states, with an average of approximately ten persons per square mile, versus the national average of nearly 80 persons per square mile. South Dakota is also a state with lower than average household income, according to the US Census Bureau. In fact, several South Dakota counties have the lowest median incomes in the nation and also some of the highest rates of poverty. Finally, South Dakota has a significant Native American population, comprising 8.5 percent of the total population.[21]

These three factors (the rural nature of the state, the low income of its population, and the large minority population) are important in that they have implications not only for the incidence and prevalence of overweight and obesity, but also for the structure and implementation of the strategies within the plan. These factors were taken into consideration by stakeholders when creating the plan to ensure the greatest possible level of success.

People with Disabilities

Stakeholders are also mindful of the fact that South Dakotans with disabilities have special needs. Because of this, the information and strategies within the plan are accessible on the internet and can be easily adapted to meet the physical and nutritional needs of people with disabilities. The information within the plan can also be easily converted for use by people with hearing or vision impairments. Likewise, the strategies within the plan are also appropriate for people with developmental or other disabilities.

Cultural Appropriateness

Photo by South Dakota Tourism

As stated previously, South Dakota has a significant Native American subpopulation.[21] The plan has been developed to be truly statewide in its information and implementation, applying to all residents of the state, including Native Americans. Tribal governments, Indian Health Service (IHS), and other tribal entities can utilize these strategies in Native American communities. Those community members who are cognizant of Native American culture, such as tribal elders, should be encouraged to participate in community efforts. The information within the plan is adaptable and can be translated into Native American or other languages.

Parents and Caregivers

Introduction

Obesity is a serious health concern for children and adolescents. It is affecting boys and girls of all ages, races, and ethnic groups throughout the country and this state. The immediate risks are physical, emotional, and social. Overweight and obese children are at risk of developing serious health conditions including hypertension and heart disease. The emotional and social consequences for overweight children in a society that stigmatizes this condition are severe and traumatizing. Obese children are more likely to become obese adults and will suffer the health-related problems associated with this condition.[33] Due to these factors, it is vital that children are targeted for preventive interventions at the earliest possible juncture.

The 2008 PedNSS data, which surveys children ages two to five years from limited income families at or below 185 percent of the federal poverty level, indicates that 35.9% of South Dakota children are overweight or obese.[2] And according to the 2008-2009 South Dakota School Height and Weight Report, 33.6% of children and adolescents ages 5-19 years are overweight or obese.[5] With these rates for children, it is becoming increasingly important to provide parents and caregivers with the appropriate information and tools to make good choices for their children, to educate their children, and to provide a healthy environment in which to make these choices.

> Obesity results when a child consumes more calories than the child uses. The imbalance between calories consumed and calories used can result from the influences and interactions of a number of factors, including genetic, behavioral, and environmental factors. It is the interactions among these factors – rather than any single factor – that is thought to cause obesity.[32]

Parents and caregivers play an integral and vital role in impacting the issue of overweight and obesity for South Dakota children. For example, breastfeeding decreases obesity in childhood and later in life.[34] The breastfed infant is better able to control intake in response to appetite. However, the 2008 National Immunization Survey for South Dakota infants born in 2006 reported 76.8% were ever breastfed. NIS data also reported 47.5% of South Dakota infants were breastfed at least 6 months and 22.1% were breastfed at least 12 months.[16] Young children rely on their parents and caregivers to decide which foods to eat and how much physical activity they need. School age children and adolescents require information and role-modeling from parents and caregivers as they start to make decisions on their own.

Our country has seen a decrease in the physical activity opportunities afforded to children over the past few decades due in large part to advances in technology, crime, and community infrastructure. Most children today have ready access to television, video games, and computers. National studies have shown a definite correlation between the number of hours children watch television and their risk of being overweight. Use of computers for educational purposes is a necessity for success in school. However, limitation of the amount of recreational screen time should be considered due to the potential negative consequences. In addition, many parents are concerned about the safety of their children and are uncomfortable allowing them to walk or ride their bicycles to school. Thus, many more children are being driven to school today than in decades past. Sidewalks and parks, which are conducive to biking or walking, are often missing in new housing developments. The location of a new school building is often too far from the residential areas to encourage walking. While each of these changes on their own may not be an issue, when they are combined, they compound the challenges for parents and caregivers.

In typical South Dakota families today, both parents are working. South Dakota leads the nation with 78% of mothers of children under age six in the workforce.[22] While parents provide the first learning environment for their children, a majority of South Dakota children spend a portion of their day with other caregivers and in schools and programs that serve children so interventions must also be directed towards these entities. With increased demands at the workplace, healthy nutrition options at home are not always a priority. Many parents are trying to juggle two careers, a variety of activities for their children, and their own community activities. Due to these issues, many parents lack the time available for the conventional preparation of meals and welcome the ease of fast food restaurants and convenience foods. Sitting down to a well-balanced meal in the evening with the entire family is challenging.

There are a number of South Dakota projects already in existence for parents and caregivers that can be utilized and built upon by this plan. For instance, the Bright Start Initiative provides an opportunity to distribute information to new parents through a "Welcome Box" and through a monthly parent update. WIC provides a bimonthly newsletter that includes physical activity tips, breastfeeding information, and nutritional information to all WIC participants. WIC also implements National Nutrition Month activities in March and National Breastfeeding Month activities in August. The "Walk in the Park" program sponsored by SD Game, Fish and Parks, provides an opportunity for families to participate in a series of guided hikes in South Dakota's state parks, recreation areas, and nature preserves. The SD Department of Social Services, Division of Child Care Services partnered with the SD School-Age Care Alliance, SD Dairy Council, and Action for Healthy Kids to distribute ReCharge! Kits to after-school programs statewide. In addition, the Department of Education (DOE), Child and Adult Nutrition Services Program provided several training opportunities for child care centers, schools, and family

child care centers enrolled in the food program. In a collaborative project between the Departments of Education, Health, and Social Services, cards featuring Physical Activities and Healthy Snacks for Young Children and also best practices were distributed to child care programs and can be found at http://healthysd.gov/ChildCare/PDF/activitycards.pdf. The South Dakota Department of Health and other partners also developed the Fit from the Start (FFS) Initiative to improve nutrition and physical activity practice, policy, and environment in child care facilities throughout South Dakota. It is a piloted and evaluated child care intervention which is available free to child care providers. FFS also includes the Healthy Kids curriculum that was developed by Sanford Children's Hospital. Both programs are being implemented across the state. In the future, the South Dakota WIC Program and the SD Breastfeeding Coalition will be initiating a statewide breastfeeding campaign for health care workers, worksites, and mothers to educate and encourage broader acceptance of breastfeeding.

The stakeholders involved in creating this plan have focused on ways to encourage parents and caregivers to provide environments supportive of healthy physical activity and nutrition patterns. It is evident that behaviors adopted in childhood have lasting effects, and the thrust of these recommended objectives and strategies take advantage of and build on this knowledge.

Goal, Objectives, and Strategies

Goal: Provide healthy environments for children that promote physical activity and healthy eating.

Objective 1.1: By 2015, increase by 5% the proportion of children ages 2 - 5 who consume at least five servings of fruits and vegetables per day.

Strategies:

- Develop survey instrument and baseline data for children ages 2 - 5.

- Develop and distribute "Tips and Tools Training" for Head Start, child care providers, Early Childhood Enrichment (ECE) Centers, and tribal programs. This will include: Robert Wood Johnson Foundation toolkits; Be Well; WIC resources; Fit from the Start; and 5-2-1 Almost None Program.

- Promote and increase participation in the DOE Child and Adult Care Food Program.

- Promote nutrition seminars and other appropriate nutrition education opportunities.

- Promote TEAM Nutrition website for reliable nutrition information.

- Promote National Food Service Management Institute's Care Connection for the Child and Adult Care Providers.

- Collaborate with stakeholders to develop standardized guidelines and nutrition education for child care services according to the Child and Adult Care Food Program.

- Research and develop a cookbook to provide meal ideas, menus, and recipes that are quick, easy, affordable, healthy, and child friendly.

- Strengthen meal pattern requirements for child care facilities.

  Data Source: To be developed.

<u>Objective 1.2:</u> By 2015, distribute the CDC Physical Activity Guidelines and other physical activity resources for young children to 400 licensed and registered child care providers.

Strategies:

- Establish baseline data for licensed and registered child care providers.

- Incorporate National Association of Sport and Physical Education Physical Activity Guidelines for Birth to 5 into existing training and encourage inclusion in child care programs.

- Incorporate Physical Activity Guidelines for age six and older into existing training.

- Provide Physical Activity Guidelines evidence-based strategies to training attendees.

- Collaborate with WIC, licensed and registered child care programs, Head Start, ECE Centers, SDSU Cooperative Extension Service, and tribal programs, to disseminate Physical Activity Guidelines to families and caregivers through the SD Game, Fish and Parks Backpack Program, WIC, HSD Program, and MOPS.

- Provide Physical Activities and Healthy Snacks for Young Children to child care programs and parents.

- Promote the South Dakota Early Learning Guidelines that include physical activities for young children to child care providers and parents.

- Encourage decreased TV and video game usage within child care programs and at home using initiatives such as the Verb Program.

- Distribute Be Well: Messages from Moms on Living Healthier Lives to training attendees, caregivers, and parents.

  Data source: Number of licensed and registered child care providers who receive the CDC Physical Activity Guidelines and resources.

Objective 1.3: By 2013, distribute 50,000 brochures, posters, and other educational materials regarding decreased consumption of sugar-sweetened beverages to parents, caregivers, and schools.

Strategies:

- Distribute materials to Head Start, WIC, ECE Centers, child care programs, Dakota Smiles Program, MOPS, March of Dimes, Birth to 3 Connections, and schools.

- Review the current resources and revise and develop additional culturally appropriate materials as needed.

  Data Source: Number of brochures, posters, and other education materials distributed.

Objective 1.4: **By 2015, increase the proportion of infants who continue to be breastfed at six months to 50% and at one year to 25%.**

Strategies:

- Distribute educational and marketing materials to increase support for breastfeeding with a focus on family, fathers, workplaces, and Native Americans.
- Promote membership in the SD Breastfeeding Coalition.
- Maintain and expand the WIC Breastfeeding Peer Counselors program.
- Develop a toolkit for health care providers to encourage breastfeeding duration and exclusivity.
- Promote breastfeeding to Indian Health Service and Urban Indian Health clinics.
- Encourage child care providers to support the continuation of breastfeeding for children in their care.
- Develop and promote breastfeeding support model policies for workplaces.

  Data Source: National Immunization Survey.

Objective 1.5: By 2015, increase to 80% the breastfeeding initiation rate.

Strategies:

- Provide families with education and marketing materials.
- Develop a media campaign to promote breastfeeding.
- Provide a toolkit for health care providers to increase support for breastfeeding.

  Data Source: National Immunization Survey.

Objective 1.6: **By 2015, increase by 25% the utilization of the parents and child care information on the HealthySD.gov website.**

Strategies:

- Market HealthySD.gov website.
- Promote HealthySD.gov website in newsletters distributed to child care providers.
- Request that partners include the HealthySD.gov website as a link on their websites.
- Review current HSD Program marketing materials and determine whether new materials are needed.
- Distribute existing business card style brochures that describe HealthySD.gov to child care providers and parents.
- Explore the feasibility of using other social media options such as Facebook and Twitter.
- Provide link to LetsMove.gov website to encourage implementation of tips, resources, and step-by-step strategies for parents.

Data Source: Hits on the HealthySD.gov Parent and Child Care Tabs.

Leaders and Key Organizations committed to provide healthy environments for children that promote physical activity and healthy eating:

Child and Adult Nutrition Services, Department of Education
Child Services, Sanford Children's Hospital
Coordinated School Health, Departments of Education and Health
Division of Parks and Recreation, Department of Game, Fish and Parks
Head Start, Department of Education
Healthy South Dakota Program, Department of Health
Maternal and Child Health Program, Department of Health
Oral Health Program, Department of Health
Out-of-School Time Program, Department of Social Services
South Dakota Breastfeeding Coalition
South Dakota Park and Recreation Association
South Dakota State Medical Association
South Dakota State University Cooperative Extension Service
Women, Infants and Children (WIC) Program, Department of Health

Schools and Youth Organizations

In South Dakota, the Department of Education 2009 Fall Enrollment data indicates that 138,152 students were enrolled in K-12 public and non-public schools.[24] According to the 2008-2009 South Dakota School Height and Weight Report, over the past 11 years the State has experienced an increase in the obese category for school age children and adolescents, K-12, from 15.1 percent to 16.6 percent. By race, 45.7 percent of Native American children are overweight or obese compared to 33.6 percent overall.[5] South Dakota has not met the national *Healthy People 2010 Initiative* of 5 percent overweight and obese for children and adolescents, however in South Dakota, this number has been relatively flat for the past few years.[5]

> "Children today have a shorter life expectancy than their parents for the first time in 100 years."
>
> –Dr. William J. Klish, professor of pediatrics, Baylor College of Medicine.

There are numerous theories about the causes of this obesity epidemic. Children are spending more of their time away from home in school, out-of-school time programs, or child care. Free time for children has declined because of increased time away from home but participation in organized activities has increased. Unstructured playtime has also decreased to make room for organized activities.[23] As a result, physical activity and healthy food and beverages in schools, out-of-school time programs, and child care settings play an

increasingly important role. In order to develop promising strategies for interventions, these changes need to be taken into consideration.

Schools are one of the best resources to enlist in the fight against childhood and adolescent obesity. Engaging students in physical education and nutrition education during the course of the school day is vital to ensuring they receive the information and education needed for making and sustaining healthy lifestyle choices. Schools play a major role in improving nutritional choices in their cafeteria menus, vending machines on school property, and concession stands. Research shows that children with chronic poor nutrition attain lower scores on standardized achievement tests, especially tests of language ability.[25] Physical activity should be a priority for schools through physical education classes and the expansion of intramural and interscholastic sports programs. Schools and youth organizations also have the opportunity to provide education for students in both traditional classes and in non-traditional methods such as extracurricular activities, bulletin boards, newsletters, and websites.

Since the initial plan was written, several initiatives and activities have been implemented by state agencies and within schools and youth organizations to make an impact on this issue. The SD Department of Education received TEAM Nutrition grants from the US Department of Agriculture to give students the knowledge, skills, and opportunities for making healthful eating choices and establishing active lifestyles. New graduation requirements were approved by the South Dakota Board of Education in November 2009. Effective September 1, 2013, students will be required to take one-half credit of physical education and one-half

credit of health education. The Coordinated School Health (CSH) program remains a strong collaborative effort between the Department of Education and Department of Health. CSH provides technical assistance to school districts to plan, carry out, and evaluate health programming and to address chronic disease prevention through a coordinated approach. One of the efforts was to encourage schools, after-school programs, and organizations serving youth to apply for funding from the Healthy Kids Healthy America program of the National Governor's Association. Consequently, 17 schools, out-of-school time programs, and organizations serving youth received awards and used the funding to support activities to improve policy and environment through physical activity and nutrition. South Dakota Safe Routes to School (SRTS) is presently funding programs in 22 schools within 6 communities. The SRTS projects include: walking school buses, bicycle trains, walking/biking safety courses, public safety announcements, walking and bicycling incentive programs, bicycle rodeos, walking and bicycling connective paths, flashing signals, signage, crossing improvements, driver feedback signs, pedestrian countdown timers, in-street pedestrian yield signs, bicycle lanes, bike racks, and pedestrian bridges.

The objectives and strategies in this chapter offer practical options for schools, out-of-school time programs, and organizations serving youth to provide children and adolescents with the knowledge and skills needed for a lifetime of physical activity and healthy eating.

Goal, Objectives, and Strategies

Goal: Provide opportunities for youth to learn and practice skills which lead to a lifetime of physical activity and healthy eating.

Objective 2.1: By 2015, increase by 5% the number of schools that require students to take four or more health education courses in grades 6 - 12.

Strategies:

- Partner with post-secondary institution(s) to conduct literature reviews to determine the recommended amount of nutrition education needed within a health education course to influence eating behaviors of youth.
- Educate the public and school administration/boards/staff about the definition of quality comprehensive sequential health education.
- Provide professional development opportunities and technical assistance to those who teach health education.
- Work with post-secondary institutions to ensure that physical education teacher candidates receive a health education endorsement.
- Work with post-secondary institutions to ensure that elementary education teacher candidates take at least one health education methods course.
- Collaborate with stakeholders to increase health education courses offered by schools to meet national health education recommendations.
- Provide technical assistance to schools in regard to the implementation of the SD Board of Education graduation requirements, which include mandatory health education.

- Provide information on resources and encourage schools to apply for mini-grants for collaboration with Registered Dietitians to provide nutrition education.

- Provide reliable resources for staff to be able to provide nutrition education for students through methods outside of the classroom such as bulletin boards, newsletters, websites, and other activities.

  Data Source: School Health Profiles.

<u>Objective 2.2:</u> By 2015, maintain the number of K-12 schools that require physical education.

Strategies:

- Partner with post-secondary institution(s) to conduct literature reviews to determine the recommended amount of physical education needed to influence physical activity behaviors for youth.

- Educate the public and school administration/boards/staff about the definition of quality physical education.

- Provide professional development opportunities and technical assistance to those who teach physical education.

- Work with post-secondary institutions to ensure that elementary education teacher candidates take at least one physical education methods course.

- Collaborate with stakeholders to increase physical education courses offered by schools to meet national daily physical education recommendations.

- Assist schools to implement the SD Board of Education graduation requirements, which include mandatory physical education.

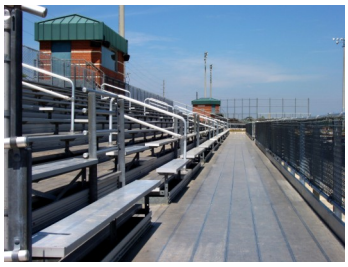
- Encourage schools to apply for the national HealthierUS School Challenge.

- Encourage schools to review their wellness policy to ensure implementation and measure progress in providing physical education.

Data Source: School Health Profiles.

<u>Objective 2.3:</u> By 2015, provide schools, out-of-school time programs, and organizations serving youth with resources to implement science-based strategies to promote healthy lifestyle behaviors.

Strategies:



- Assist schools to incorporate the science-based strategies into appropriate curriculum standards.
- Provide professional development opportunities and technical assistance to schools and other programs to implement the science-based strategies.
- Develop a toolkit with resources and recommendations for replication of the science-based strategies; promote HealthySD.gov as a network for information.
- Provide professional development opportunities, technical assistance, and grant writing training for implementation of the science-based strategies.
- Provide resources and information to administrators, teachers, food service personnel, and staff members on science-based nutrition and physical activity for use in classrooms and out-of-school time activities.
- Partner with post-secondary institution(s) to develop an evaluation tool to measure the effectiveness of the implementation of the science-based strategies.
- Encourage schools to develop trails and outdoor classrooms to promote physical activity during the school day.
- Promote the use of innovative workout rooms, gym equipment, and recreational facilities that are available to students before, during, and after school hours.
- Encourage schools to offer a variety of physical activities to attract students of all abilities.
- Provide recommendations for minimum play space and duration of play to schools, out-of-school time programs, and organizations serving youth.

- Encourage schools to maintain the number and length of time for recess as an opportunity for children to participate in free-time physical activity.

- Encourage schools to offer recess before lunch.

- Coordinate with health professionals to ensure the accuracy of health-related messages developed for schools.

- Provide link to LetsMove.gov website to encourage implementation of tips, resources, and step-by-step strategies.

  Data Source: Number of resources developed and distributed; technical assistance and training provided.

Objective 2.4: By 2015, 100% of the school districts and 50 youth organizations in SD will designate a health contact to receive News Infuse and other health information.

Strategies:

- Identify membership benefits and role of the health contact.

- Designate an agency/organization to recruit and maintain the youth organization health contact list.

- Designate an agency/organization to maintain the school health contact list.

- Utilize health contacts to distribute materials and promote professional development opportunities; serve as a communication network to Coordinated School Health.

  Data Source: Number of school districts and youth organizations on the contact lists and number of resources distributed to the contacts.

Objective 2.5: **By 2015, 100% of school districts participating in the National School Lunch Program (NSLP), School Breakfast Program (SBP), and Summer Food Service Program (SFSP) will comply with USDA dietary guidelines in providing healthy meals to students.**

Strategies:

- Provide dietary guidelines resources and information to administrators, teachers, and food service personnel.
- Provide nutrition education information to food service personnel through conferences, Child Nutrition Institute, and newsletter articles.
- Promote the Child Nutrition Institute to all schools and encourage school personnel to participate in the Institute and other education opportunities.
- Provide information for mini-grants and encourage school districts to apply for funding to collaborate with Registered Dietitians to improve menus.
- Encourage and promote the use of locally grown produce in the school lunch program.
- Encourage schools to apply for the national HealthierUS School Challenge.
- Encourage schools to provide an adequate amount of time for students to eat school meals and to schedule lunch periods at reasonable hours around midday.
- Encourage schools that do not participate in the School Breakfast Program to offer other breakfast alternatives to students.
- Encourage schools to increase breakfast participation by promoting consumption of healthy breakfasts at home or at school.
- Encourage schools to review their wellness policy to ensure implementation and measure progress in meeting meal program requirements.
- Encourage schools to participate in the Summer Food Service Program.
- Promote TEAM Nutrition and www.mypyramid.gov as a resource for reliable information.

- Encourage and support interested schools to surpass the USDA dietary guidelines in providing healthy meals to students.

  Data Source: Child and Adult Nutrition Services National School Lunch Program (NSLP) and School Breakfast Program (SBP) menu analysis or program reviews.

Objective 2.6: By 2015, increase to 25% students in grades 9 – 12 who eat five or more servings of fruits and vegetables per day.

Strategies:

- Provide information on resources and encourage schools to apply for the USDA Fresh Fruits and Vegetables Program through the Department of Education.

- Provide information on resources and encourage schools to apply for mini-grants for fresh fruit and vegetable events and school gardening projects.

- Encourage and assist schools and businesses/farmers that sell locally grown produce to form partnerships.

- Seek the appropriate agency in the state to implement a Farm to School Program and provide technical assistance and support to that agency.

- Develop and distribute an informational packet to all schools which promotes fruit and vegetable consumption throughout the school day.

- Encourage schools to offer fruits and non-fried vegetables in vending machines, school stores, canteens, or snack bars.

- Include information about the Fruits and Veggies More Matters Program in school communications.

- Establish a method for schools to submit success stories on fruit and vegetable events to HealthySD.gov for recognition.

- Develop a challenge for schools for most improved sales of fruits and vegetables at a sporting event.

  Data Source: South Dakota Youth Risk Behavior Survey.

<u>Objective 2.7:</u> By 2011, provide all school districts and youth organizations with information on healthy food choices both in and outside of meal service.

Strategies:

- Develop, distribute, and encourage adoption of guidelines and policies for food and beverages available on school campuses and during school events.

- Include information about healthy vending and nutrition education in school communications.

- Provide point-of-decision labeling for healthy eating.

- Plan health promotion activities such as cooking demonstrations, school gardens, and guest nutrition speakers for students, parents, and school personnel that encourage the consumption of fruits and vegetables and low-fat dairy products.

- Develop a toolkit with the necessary resources to allow replication in schools and promote HealthySD.gov as a network for information.

- Partner with post-secondary institutions(s) to develop an evaluation tool to measure the effectiveness of the health promotion activities.

- Encourage schools to review their wellness policy to ensure implementation and measure progress in providing healthy choices both in and outside of meal service.

  Data Source: Number of resources provided.

<u>Objective 2.8:</u> By 2015, increase to 65% the number of schools that have ever assessed their policies, activities, and programs by using the School Health Index or a similar self-assessment tool which addresses the areas of nutrition and physical activity.

Strategies:

- Develop guidance for school health council or wellness committee development and implementation, which includes completing a self-assessment.

- Administer a pilot project providing training to schools on conducting self-assessment and developing action plans for implementation based on the results.

- Provide mini-grants to schools that complete a self-assessment and develop an action plan for implementation based on the results.

- Conduct presentations for school board members and school administrators in regard to the importance of conducting a self-assessment.

- Publish newsletter articles for school board members, school administrators, child nutrition services, and other school staff.

- Distribute self-assessment tools to school administrators.

  Data Source: School Health Profiles.

<u>Objective 2.9:</u> By 2013, increase by 50% the number of schools participating in the Safe Routes to School program.

Strategies:

- Work with designated school and youth organization health contacts to increase awareness of Safe Routes to School opportunities.

- Provide Safe Routes to School National Course in at least one community on an annual basis.

- Provide technical assistance to schools that have the intention to apply for Safe Routes to School funding.

- Circulate Safe Routes to School newsletter to school health contacts, community health contacts, youth organizations, and other agencies and organizations as appropriate.

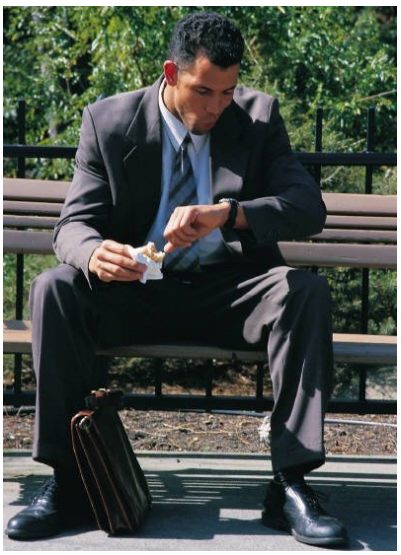
- Identify schools, who do not receive federal funding, to participate in Safe Routes to Schools non-infrastructure activities without federal funding.

  Data Source: Safe Routes to School (SRTS) enrollment.

Leaders and Key Organizations committed to provide opportunities for youth to learn and practice skills which lead to a lifetime of physical activity and healthy eating:

American Heart Association
Child and Adult Nutrition Services, Department of Education
Coordinated School Health, Departments of Education and Health
Division of Parks and Recreation, Department of Game, Fish and Parks
Healthy South Dakota Program, Department of Health
Maternal and Child Health Program, Department of Health
National American University
Out-of-School Time Program, Department of Social Services
Safe Routes to School, Department of Transportation
South Dakota Association for Health, Physical Education, Recreation and Dance
South Dakota Park and Recreation Association
South Dakota State University Cooperative Extension Service
Supplemental Nutrition Assistance Program, Department of Social Services
Watertown Boys and Girls Club

Workplace



The workplace provides an opportunity for positive influence on today's workers. Workers spend many hours each week at the workplace, and for the most part, workers are a "captive audience." This allows employers to be very influential in encouraging wise choices regarding physical activity and healthy eating. Prevention of overweight and obesity is a "win-win" for employers and employees. The Leading by Example document from the Partnership for Prevention illustrates that employers have much to gain by encouraging and providing opportunities for healthier lifestyles: healthier workers are more productive, absent less often, and have higher morale.[26] According to the CDC, medical expenses for obese employees are estimated to be 42 percent higher than for employees with a healthy weight.[36] Indirect costs of poor health (e.g. absenteeism, disabilities, lower work output) may be two to three times higher than the direct medical costs.[26] On the other hand, the cost benefit of worksite health promotion programs has been well documented. A review of several studies of these programs revealed an average $3.50-to-$1 savings-to-cost ratio in reduced absenteeism and

health care costs.[26] Another review indicated an average 28% reduction in sick leave absenteeism after implementing worksite health promotion programs.[26] And yet another review showed a combined $5.93-to-$1 savings-to-cost ratio in medical costs, absenteeism, and workers' compensation.[35] The encouragement and support of physical activity and healthy eating and implementation of health promotion programs also has the potential to extend beyond the worksite and positively influence employees' dependents. It is an excellent "return on investment" for a business.

Why Should Employers Get Involved?[36]

Potential benefits to employers:

- Controls health care costs.
- Decreases absenteeism.
- Reduces employee turnover.
- Improves worker satisfaction.
- Improves morale.
- Ensures greater productivity.
- Reduces workplace accidents and injuries.

Potential benefits to employees:

- Ensures greater productivity.
- Reduces risk of injury.
- Improves personal health and fitness.
- Provides social opportunity and source of support within the workplace.
- Improves quality of life.

Since the implementation of the first plan, the HSD Program staff and their partners have assisted employers with worksite wellness training and implemented a statewide data collection system. Over 50 worksite wellness consultants, including several SDSU Cooperative Extension Services staff, received training to provide technical assistance resources to businesses that implemented wellness programs. Through a *Healthy States* grant from the National Governors Association, mini-grants were awarded to eleven businesses implementing wellness programs to promote and support environment and policy change. The *Strides to a Healthier Worksite* (http://www.healthysd.gov/Workplace/PDF/WorksiteToolkit.pdf toolkit was updated with additional resources. The American Heart Association developed the Start! Walking Program, a toolkit that was distributed to worksites. The HSD staff also provided CDC's LEAN *Works!* toolkit to employers. The HealthySD.gov website has a specific section for workplaces and each year three Healthy Challenges

are targeted at the work site, where fellow employees can support each other to maintain healthy lifestyles.

The stakeholders recognize the opportunities that the workplace provides and have outlined a framework to address this in the goal, objectives, and strategies in the following section.

Goal, Objectives, and Strategies

Goal: To promote healthy lifestyles and reduce chronic disease in South Dakota workplaces through healthy eating and physical activity.

Objective 3.1: By 2015, establish and sustain 200 worksite wellness programs in the South Dakota business community using science-based best practices.

Strategies:

- Encourage businesses to utilize the Strides to a Healthier Worksite toolkit to assist them in implementing a wellness program.
- Develop a list of best practices or standards to identify and facilitate appropriate interventions and incentives in worksite wellness programs in South Dakota.
- Promote and encourage worksites to participate in online challenges hosted on the HealthySD.gov website.
- Identify awareness campaign strategies that will encourage businesses to start or enhance existing worksite wellness programs.
- Create connections and provide guidance to health care system community wellness programs in assisting worksites with wellness programming.

- Develop a statewide worksite wellness recognition program that rewards businesses for their accomplishments, encourages businesses to continue their efforts, and also provides businesses with a set of standards to guide their programming efforts and ensure quality outcomes.

- Collaborate with partners and policymakers to develop methods which are guided by CDC's science-based strategies to influence environmental and policy changes in worksites and to increase opportunities for worksite wellness.

  Data Source: Healthy South Dakota Worksite Wellness Program enrollment.

<u>Objective 3.2:</u> By 2015, recruit and sustain a minimum of 65 worksite wellness consultants throughout the state.

Strategies:

- Develop a recruitment plan to increase and sustain worksite wellness consultants who cover the major population regions across South Dakota.

- Establish partnerships with internal and external groups to be resources for the consultants and to provide a strong network of support.

- Establish worksite wellness consultant best practices that follow the worksite wellness recognition standards.

- Provide worksite wellness consultants with regular training, updated toolkits, and resources.

- Promote programs and campaigns such as Fruits and Veggies More Matters Program and CDC's Lean *Works!* with worksite wellness consultants.

- Develop statewide worksite wellness consultant recognition program to sustain the network of resources and reinforce the science-based standards for quality outcomes.

  Data Source: Statewide Data Collection System.

Objective 3.3: **By 2015, maintain and enhance the statewide data collection system to manage and evaluate the outcomes and impact of worksite wellness programs according to the science-based best practices.**

Strategies:

- Promote and market the use of the data collection system to the business community to establish baseline data for businesses with worksite wellness programs and determine the number of science-based best practices being used.

- Promote the data collection system to the SD Society for Human Resource Management and Chambers of Commerce.

- Analyze and evaluate data to promote best practices in worksite wellness to the business community.

- Enhance the capabilities of the data collection system to provide businesses with individual outcome and process improvement feedback on their worksite wellness programs.

- Evaluate the effectiveness of the system and make recommended improvements.

  Data Source: Statewide Data Collection System.

Leaders and Key Organizations to promote healthy lifestyles and reduce chronic disease in South Dakota workplaces through healthy eating and physical activity:

American Heart Association
Avera
City of Sioux Falls
Employee Wellness Program, Bureau of Personnel
Healthy South Dakota, Department of Health
Partners in Prevention, Sanford Health
South Dakota Breastfeeding Coalition
South Dakota Park and Recreation Association
South Dakota State University Cooperative Extension Service

Community

The state of South Dakota is one of the nation's most rural areas. The 2009 US Census population estimate for South Dakota was 812,383. The land mass is 75,885 square miles, which equates to 10.7 people per square mile.[21] Only three cities top 25,000 in population. Nearly 60% of South Dakota's total population live in small, rural communities of 5,000 or fewer people, with a significant number living in communities of fewer than 500 people. South Dakota is home to nine Native American tribes comprising 8.5% of the state's population. Adults 65 and older comprise 14.4% of the population, which is slightly higher than the national average of 12.8%. At 13.2%, the number of South Dakotans living below the poverty level is slightly higher than the national average of 13.0%.[21] These demographics pose challenges in the development and delivery of obesity prevention strategies for communities.

Communities strongly influence the lives and life styles of its members. Communities and how they are organized and developed have a major role in how people choose to live, work, and play. Healthy communities are those that embrace the belief that health is more than

merely an absence of disease; a healthy community includes those elements that enable people to maintain a high quality of life and productivity.[27] A healthy community as described by the U.S. Department of Health and Human Services Healthy People 2010 report is one that continuously creates and improves both its physical and social environments, helping people to support one another in aspects of daily life and to develop to their fullest potential.[27]

In developing this healthy community attitude communities must also be mindful of the special needs of populations such as seniors, people with disabilities, rural citizens, and Native Americans and other minorities. One such example is the realization that the intensity of recommended physical activity for the senior population is different than that recommended for the general population. Tailoring environments and resources for persons with disabilities is essential to promoting access to physical activity and nutrition options. Communities should recognize the special needs of low-income community members as well as limited access to exercise facilities and fresh fruits and vegetables for those living in rural communities. As communities grow or shrink they need to be cognizant of the changing needs of the population. Parents drive their children to school because of distance, school consolidation, in some cases, neighborhood safety issues, and often, mainly out of habit. As small rural communities lose retail businesses and churches, rural residents spend more and more time driving to meet their basic needs. These and other issues call for recognition and understanding if changes are to materialize that direct community-led strategies for healthy lifestyles.

If we want to improve the health of the communities we serve, or an entire state, or the entire nation, we need to act upon the fact that our health is shaped far more by the places we live, learn, work, and play than by what happens in clinics and hospitals.[28] Community leaders can be instrumental in providing education and leading the charge to coordinate resources to promote healthy lifestyle changes among the members of their community. Community strategies such as expanding and promoting the use of bike paths and park systems and promoting healthy food choices in public facilities can be effective. Other success factors include involving many partners in the community. "Communities experiencing the most success in addressing health and quality-of-life issues have involved many components of their community. Community-based approaches in conjunction with targeted approaches in schools, health care, and worksites increase the likelihood for success to improve personal and community health," according to the Healthy People 2010 Report.[29]

"Environmental factors, including lack of access to full-service grocery stores, increasing costs of healthy foods and the lower cost of unhealthy foods, and lack of access to safe places to play and exercise all contribute to the increase in obesity rates by inhibiting or preventing healthy eating and active living behaviors."[30] To help communities in this effort, CDC initiated the Common Community Measures for Obesity Prevention Project. The Project identified and recommended a set of 24 strategies and associated measurements that communities and local governments can use to plan and monitor environmental and policy-level changes for obesity prevention.

An implementation and measurement guide for these strategies is now available at www.cdc.gov/nccdphp/dnpao/publications/index.html.

In 2005, HSD staff developed the Strides to a Healthier Community, a resource that outlines community-based interventions involving community planning and creating environments for healthy eating and physical activity. An update of this document was released in early 2010. This resource has been widely distributed and can be found on the HealthySD.gov website. HSD has also offered several challenges to South Dakotans including "Get Fit in 150!" which encouraged moderate-intensity physical activity of at least 150 minutes per week, "Veggie Madness," and a whole grains challenge. The popularity of these challenges has been overwhelming and the HSD staff will continue to offer challenges to help South Dakotans be physically active, eat healthy, and live healthier lives.

There are a variety of current activities in South Dakota communities that provide best practices to share with other communities wanting to make change. Several communities have developed Farmers' Markets. A climbing wall, numerous trails, and play equipment were added to Memorial Park in Rapid City. The Black Hills Forest Service at Horse Thief Lake and Bismarck Lake created walking paths and boardwalks for people with disabilities and their caregivers. In addition, several accessible campsites were developed. In 2005, Rapid City received a Pioneering Healthier Communities grant from the national YMCA. In 2009, the community of Pierre was one of 10 communities selected for ACHIEVE funding from the National Park and Recreation Association. The purpose of these grants is to bring together local leaders and stakeholders to build healthier communities by promoting policy, systems change, and environmental change strategies that focus on physical activity, nutrition, tobacco cessation, obesity, diabetes, and cardiovascular disease.

Municipal government, health care systems, and economic development groups can be the springboard for creating change in South Dakota communities. Community-wide awareness campaigns, public education opportunities, community walking programs, healthy choices on restaurant menus, environmental improvements (such as installing sidewalks and lighting), and peer support programs are a few of the possibilities for this important work.

The goal and associated objectives and strategies in this chapter can assist in promoting healthy choices for any community wishing to take the challenge. Please note that although "community" can be defined a number of ways, for the purpose of this plan, communities are defined as the municipalities, their residents, and the nearby rural residents who identify with those municipalities of South Dakota. Many of the objectives and strategies can also apply to those living in frontier and rural areas of South Dakota and their unincorporated, but self-defined, neighborhoods and communities.

Photo by South Dakota Tourism

Goal, Objectives, and Strategies

Goal: To promote healthy lifestyles and reduce chronic disease in South Dakota communities through healthy eating and physical activity.

Objective 4.1: By 2011, develop ten model wellness policies for communities to adopt.

Strategies:

- Develop model wellness policies for communities based on CDC's Recommended Community Strategies and Measurements to Prevent Obesity in the United States. The policies should focus on zoning for bike paths; building sidewalks and green spaces/parks to increase physical activity; gardening; concession stands offering healthy choices; labeling to decrease portion sizes and encourage healthy choices; healthy vending options to decrease sweetened beverages; and breastfeeding.

- Promote the model policies to communities through the HealthySD.gov website, press releases, various organizational newsletters, and newspapers.

- Promote and implement the model wellness policies with communities.

- Collaborate with the Municipal League to present the model wellness policies at their annual conference.

- Promote programs that provide social support for physical activity or increased access to locations for physical activity.

- Promote physical activity programs that can be individualized based on a person's level of readiness and interest areas.

Data Source: Development of model policies.

<u>Objective 4.2:</u> By 2011, collaborate with five community organizations in five different communities to create an environment conducive to healthy food and beverage choices and increased physical activity.

Strategies:

Faith-Based Organizations:

- Target families and church leaders through faith-based promotion of healthy eating and physical activity.
- Provide resources and information statewide to parish nurses.
- Provide Working on Wellness (WOW) newsletter to ministerial groups.
- Promote the Nutrition and Physical Activity Church Coordinator role to ministerial groups.
- Provide education and information on how to start community gardens.
- Provide education and information on how to start a farmers' market.
- Evaluate the effectiveness of information and resources provided to faith-based organizations.

Grocery and Convenience Stores:

- Establish a workgroup to develop strategies to encourage grocery and convenience stores to offer a broader selection of healthy foods and beverages.
- Explore available communication venues with grocery and convenience store managers, owners, and patrons.
- Select and implement the most effective communication venue for the developed messages and strategies.
- Identify the communities with whom to establish relationships and partnerships with grocery and convenience stores.

- Collaborate with food assistance and nutrition programs to provide education on healthy food options to grocery and convenience store owners and managers.

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- Advocate to the SD Department of Agriculture and SDSU Cooperative Extension Services to promote locally or state grown products.

- Create an incentive and recognition program to encourage stores to reduce point-of-sale marketing of calorie-dense, nutrient-poor foods.

- Provide point-of-decision labeling for healthy eating.

- Evaluate the effectiveness of communication provided to grocery and convenience stores.

Restaurants:

- Establish a workgroup to develop strategies to encourage restaurants to provide a broader selection of healthy foods and beverages.

- Explore available communication venues with restaurant owners, managers, and patrons.

- Select and implement the most effective communication venue for the developed messages and strategies.

- Identify the communities with whom to establish relationships and partnerships with restaurants.

- Provide information to restaurants about farmers' markets and locally grown venues.

- Encourage restaurants to offer reasonably sized portions and low-fat and low-calorie menus.

- Encourage restaurants to include nutrition labeling on menus.

- Offer incentives or recognition for restaurants that offer broader options for healthy foods and beverages.

- Evaluate the effectiveness of communication provided to restaurants.

Senior Centers:

- Establish a work group to develop strategies to encourage senior centers to offer a broader selection of healthy foods and beverages.
- Explore available communication venues with senior centers.
- Select and implement the most effective communication venue for the developed messages and strategies.
- Identify the communities with whom to establish relationships and partnerships with senior centers.
- Provide education and information to senior centers on how to start a community garden.
- Provide education and information on how to start a farmers' market.
- Evaluate the effectiveness of communication provided to senior centers.

Community centers:

- Establish a workgroup to develop strategies to reach community centers to encourage a better selection of healthy foods and beverages.
- Explore available communication venues with community centers.
- Select and implement the most effective communication venue for the developed messages and strategies.
- Identify the communities with whom to establish relationships and partnerships with community centers.

- Provide education and information to community centers on how to start a community garden.
- Encourage the community centers to offer fruit and vegetable options at concession stands during community events.

- Provide education and information to community centers on how to start a farmer's market.

- Evaluate the effectiveness of communication provided to community centers.

Data Source: Number of partnerships with community organizations.

Objective 4.3: By 2015, assist 10 communities to develop a healthy community program.

Strategies:

- Utilize the Municipal League to promote the development of a healthy community model and distribute the requirements to communities.

- Encourage communities to participate in coalitions or partnerships to address obesity.

- Provide seed funding through an RFP process for two communities on an annual basis.

- Provide technical assistance and resources such as "Strides to a Healthier Community" to assist with the development of infrastructure and systemic changes.

- Provide technical assistance to conduct a community needs assessment.

- Promote community prevention strategies in *Cornerstones of a Healthy Lifestyle Blueprint for Nutrition and Physical Activity*.

Data Source: Number of healthy community programs.

Objective 4.4: By 2015, decrease by 10% the number of South Dakota adults who watch two or more hours of TV each day.

Strategies:

- Provide limited TV viewing recommendations to communities.

- Promote the Turn Off the TV and Verb campaigns through the HealthySD.gov website, list serves, social media, Governor's proclamation, and statewide health associations.

- Offer a community challenge through the HealthySD.gov website.

- Develop limited TV viewing media messages to distribute to communities.

  Data Source: Behavioral Risk Factor Surveillance Survey.

<u>Objective 4.5:</u> By 2015, increase the percent of adults who participate in at least 30 minutes of moderate physical activity per day to 53%.

Strategies:

- Develop a list of all bike/pedestrian trails in South Dakota with website links and distribute through partners such as SD Tourism and SD Municipal League and post on HealthySD.gov website.

- Develop and implement a HSD challenge to increase the use of state trails.

- Collaborate with SD Game, Fish and Parks, Municipal League, and SD Tourism to develop signage for trails.

- Promote Geocaching events with HSD partners statewide.

- Offer community challenges through the HealthySD.gov website.

- Collaborate with state and city parks to promote physical activity in the parks.

- Promote opportunities for the SD Park and Recreation Association such as Great Day of Play.

- Collaborate with public transportation providers to increase the number of bike racks on buses.

- Educate communities on the importance of safety on community trails i.e. proper lighting, signage, and availability of police officers.

  Data Source: Behavioral Risk Factor Surveillance Survey.

<u>Objective 4.6:</u> By 2015, reverse the trend and increase the percent of South Dakota adults who consume at least five fruits and vegetables per day to 23%.

Strategies:

- Provide education and information to communities on how to start community gardens.
- Provide public education on appropriate serving sizes.
- Encourage convenience stores to include fresh or frozen fruits and vegetables by increasing display or shelf space, shelf labeling, or signage such as point-of-decision information.
- Partner with local produce growers and food distributors to promote consumption of fruits and vegetables.
- Encourage patrons through the use of media messages to request and purchase fruits and vegetables at convenience stores, restaurants, and concession stands.
- Develop and provide marketing tools to convenience stores, restaurants, and concession stands to promote fruit and vegetable purchases.
- Encourage school concession stands to offer fruit and vegetable options and to promote this on school websites, game programs, and signage in school facilities.
- Provide education and information to communities on how to start a farmers' market.

Data Source: Behavioral Risk Factor Surveillance Survey.

Objective 4.7: By 2015, develop educational materials for community organizations focused on reducing portion sizes offered in their facilities.

Strategies:

- Identify 10 organizations to develop partnerships.
- Develop restaurant placemats depicting appropriate portion sizes for adults and children.
- Develop table tents depicting appropriate portion sizes for adults and children and distribute to community organizations.
- Develop media messages with partners such as the SD State Medical Association to promote appropriate portion sizes.
- Include links to appropriate portion size resources on the HealthySD.gov website.

  Data Source: Number of educational materials developed and distributed.

Objective 4.8: By 2015, decrease the percent of high school students who drink a can, bottle, or glass of soda one or more times per day to 23%.

Strategies:

- Provide education, information, and resources to promote healthy beverage choices in public venues.
- Provide information on HealthySD.gov on nutrient content and composition of sugar-sweetened beverages and encourage South Dakotans to check the Nutrition Facts label.
- Encourage parental role modeling by decreasing consumption and access to sugar-sweetened beverages in the home.
- Promote the consumption of water, milk, and 100% juice to replace consumption of sugar-sweetened beverages i.e. soda, sweetened juices, and energy drinks.

- Distribute the HealthySD "Caution: Sweetened Beverages" brochure.

  Data Source: Youth Risk Behavior Survey.

Objective 4.9: By 2015, develop an adult, adolescent, and child universal media message for each science-based strategy: decrease TV viewing; increase breastfeeding initiation and duration; decrease sugar-sweetened beverage consumption; increase physical activity; decrease consumption of high-energy-dense foods; and increase fruit and vegetable consumption.

Strategies:

- Hire a marketing firm to develop the messages.

- Implement the messages in venues statewide.

- Evaluate and measure the effectiveness of the messages.

  Data Source: Number of media messages developed.

Leaders and Key Organizations to promote healthy lifestyles and reduce chronic disease in South Dakota communities:

American Heart Association
Coordinated School Health, Departments of Education and Health
Division of Parks and Recreation, Department of Game, Fish and Parks
Oral Health Program, Department of Health
Partners In Prevention, Sanford Health
Pierre ACHIEVE Grant
South Dakota Breastfeeding Coalition
South Dakota Park and Recreation Association
South Dakota Public Health Association
South Dakota State Medical Association
South Dakota State University Cooperative Extension Service
Women, Infants and Children (WIC) Program, Department of Health
Supplemental Nutrition Assistance Program, Department of Social Services
University of South Dakota Center for Disabilities, Dietetic Internship Program

Health Care

Overweight and obesity are leading causes of preventable death, second only to tobacco use, and pose a major public health challenge.[17] Rising obesity rates will continue to be a burden on the health care system over the next decade. "Medical costs associated with overweight and obesity may involve direct and indirect costs. Direct costs include preventative, diagnostic, and treatment services related to obesity. Indirect costs relate to morbidity and mortality costs. Morbidity costs are defined as the value of income lost from decreased productivity, restricted activity, absenteeism, and bed days. Mortality costs are the value of future income lost by premature deaths."[19] A study that focused on 1998-2000 state-level estimates of total, Medicare, and Medicaid obesity attributable medical expenditures shows South Dakota levels at $195 million, $36 million, and $45 million respectively.[19] Another study estimates that health care spending linked to obesity will rise to over $1 billion in South Dakota by 2018.[3] However, many opportunities exist within health care settings to positively impact this issue for patients of all ages, from primary prevention to the treatment of overweight, obesity, and other related chronic diseases.

Health care providers are in a unique position to affect change on multiple levels in individuals, communities, and health care systems. The majority of Americans interact with the health care system at least once in any given year. Health care providers are a primary and trusted source of health information. Specifically, health care providers are important catalysts for obesity prevention who can make an impact by recommending physical activity and healthy eating interventions for patients and their families. Unfortunately, patients and health care providers alike often do not take advantage of this relationship. According to the 2007 BRFSS, 20.2% of South Dakota adults reported they were given advice on their weight by a health professional and only 17.5% were advised to lose weight.[4] Furthermore, prevention and treatment of obesity through physical activity and nutrition interventions are rarely reimbursable services by third party payers, and office visits are often not long enough to allow for a comprehensive assessment and counseling for overweight or obesity. Even if insurers were to reimburse for these services, many medical providers would need training to provide these services or counseling.

One way to improve the counseling and information by medical providers is to make continuing education opportunities available statewide. Universities and colleges that train health care providers are important partners in the effort to battle the obesity epidemic. Post-secondary institutions are fundamental in the development of curricula, tools, and best

practices that will be utilized by future health care providers. The ability of future health care providers to interpret curricula and effectively translate it for patient education is key. It is imperative that health care providers have the interpersonal technique to support patients to make lifestyle changes. A number of science-based strategies are available for health care providers to promote and support for their patients to prevent and treat overweight and obesity. Those strategies include: increasing physical activity; increasing consumption of fruits and vegetables; reducing television viewing; increasing breastfeeding initiation, duration, and exclusivity; decreasing consumption of sugar-sweetened beverages; and reducing the consumption of high-energy-dense foods.

Based on new evidence that children and adolescents can be effectively treated for obesity, the U.S. Preventive Services Task Force now recommends that clinicians screen children ages 6 to 18 years for obesity and refer them to programs to improve their weight status. Comprehensive programs included 3 components: counseling for weight loss or healthy diet; counseling for physical activity or a physical activity program; and behavioral management techniques such as goal setting and self monitoring. Moderate- to high-intensity programs involve more than 25 hours of contact with the child and/or the family over a 6-month period. Families who seek treatment for obesity should look for comprehensive programs that address weight control through healthy food choices, physical activity, and behavioral skill-building.[31]

Several efforts have been made in South Dakota to enhance the role of health care. Resource tools and information promoting physical activity and nutrition were distributed through the monthly "DPCP FYI" e-newsletter to approximately 450 diabetes care professionals in and around South Dakota. Nutrition and obesity training was provided

to medical students and residents. In 2008, the "Provider Quick Reference Tool for Obesity and Diabetes Treatment Guidelines" was developed and copies were included in the *Recommendations for the Management of Diabetes in South Dakota* guidelines. These were disseminated to providers through collaborations with the Avera, Sanford, and Rapid City Regional health care systems as well as Community Health Care Association of the Dakotas, Rural Health Clinics, Veterans Administration, Indian Health Service, Urban Indian Health, and other partners. Major health care systems such as Avera and Sanford have established prevention programs for worksite wellness.

The following objectives and strategies are recommendations for beneficial changes that could be made at various stages in the health care setting and influence change on the health and economic impacts of obesity.

Goal, Objectives, and Strategies

Goal: Increase support for physical activity and healthy eating within South Dakota health care systems and among health care providers in order to achieve a healthy Body Mass Index (BMI) for all South Dakotans.

Objective 5.1: At least five major health insurance providers will expand coverage of Registered Dietitian nutrition counseling and healthy lifestyle benefits by 2015.

Strategies:

- Identify the primary health insurance providers in South Dakota and establish contact with them.

- Provide these contacts with overweight and obesity cost data.

- Develop partnerships with five of these contacts.

- Survey their current policies in regard to coverage of Registered Dietitian nutrition counseling and healthy lifestyle benefits.

- Research results and develop recommendations in terms of best practices to educate other health insurance providers.

- Provide information on new benefits and coverage.

- Survey these five health insurance providers for changes and improvements.

  Data Source: Availability of expanded coverage for Registered Dietitian nutrition counseling.

<u>Objective 5.2:</u> By 2015, provide continuing education opportunities to at least 75% of health care providers (MD, DO, NP, PA, RD) in SD.

Strategies:

- Add links to HealthySD.gov website for health care professionals related to nutrition and physical activity guidelines, educational tools, best practices on sustaining weight loss, promoting nutrition and physical activity, and managing chronic diseases related to excess weight, poor diet, and inadequate physical activity. Include pre-diabetes resources from National Diabetes Education Program.

- Develop a supplement to *SD Medicine* on obesity prevention and treatment.

- Provide continuing education opportunities regarding:
  - Calculating BMI and using yearly BMI calculations.
  - Use of electronic medical records/ to identify and follow up with overweight and obese patients.
  - Results of Diabetes Prevention Project and Diabetes Prevention Project Outcomes Study.
  - Evidence-based strategies to prevent overweight.
  - Assessing physical activity.
  - Providing health behavior information and strategies.
  - Making referrals to registered dietitians and appropriate billing codes for services.

- Collaborate with SD Diabetes Coalition on a speakers bureau for pre-diabetes targeting health care professionals at annual/bi-annual conferences.

  Data Source: Number of continuing education opportunities and number of providers in attendance.

Objective 5.3: By 2015, decrease the percent of SD adults who are obese by 2%.

Strategies:

- Develop and distribute brochures on healthy eating and physical activity to be placed in clinic waiting areas and hospital waiting rooms.

- Feature the topic of obesity on public TV programs such as "On Call" and "Health Matters" twice per year.

- Develop nutrition and physical activity "Prescriptions" and tools for patient self-assessment and record keeping.

- Distribute resources for health care providers to distribute to patients.

- Develop a wallet card for patients to take with them to health care providers to record BMI.

  Data Source: Behavioral Risk Factor Surveillance Survey.

Objective 5.4: By 2015, decrease the percent of women who gain more than the recommended amount of weight during pregnancy from 53% to 43%.

Strategies:

- Provide training and materials from the Institute of Medicine guidelines for weight gain during pregnancy to health care providers who provide prenatal care .

- Provide training to health care providers to encourage healthy weight for women of child-bearing age.

- Develop materials for appropriate weight gain during pregnancy for consumers.

- Distribute information about weight gain, healthy pregnancy, and delivery to women through clinics and hospitals.

  Data Source: South Dakota birth certificates.

Objective 5.5: By 2015, increase the proportion of infants ever breastfed to 80%.

Strategies:

- Distribute breastfeeding information to women and their families through clinics and hospitals.

- Encourage and support hospitals to achieve the Baby Friendly Hospital designation.

- Increase the number of lactation specialists through training and recognition.

- Develop model health care facility policies regarding formula distribution that support breastfeeding mothers.

- Provide incentives to health care facilities that promote and support breastfeeding mothers.

  Data Source: National Immunization Survey.

Objective 5.6: By 2015, increase the proportion of infants who are breastfed at 6 months to 50% and the proportion of infants who are breastfed at 12 months to 25%.

Strategies:

- Encourage the adoption and enforcement of worksite policies to promote breastfeeding for employees in health care facilities, including private places to express milk.

- Increase the number of lactation specialists through training and recognition.

- Distribute information to health care providers regarding the nutritional benefits of breastfeeding for 6 months and longer.

- Provide support group information to breastfeeding mothers.

  Data Source: National Immunization Survey.

Leaders and Key Organizations increase support for physical activity and healthy eating within South Dakota health care systems and among health care providers in order to achieve a healthy Body Mass Index (BMI) for all South Dakotans:

All Women Count! Program, Department of Health
All Women Count! Providers
American Association of Retired Persons
Avera
Diabetes Prevention and Control Program, Department of Health
Division of Medical Services, Department of Social Services
Healthy South Dakota Program, Department of Health
Indian Health Service
Maternal and Child Health Program, Department of Health
Medical Alliance
Office of Rural Health, Department of Health
Sanford Health, Sanford USD Medical Center
South Dakota Breastfeeding Coalition
South Dakota Public Health Association
South Dakota State Medical Association
University of South Dakota School of Medicine
Women, Infants and Children (WIC) Program, Department of Health

Surveillance and Evaluation

Evaluation is used to determine the impact of the strategies planned or implemented in South Dakota. Stakeholders are encouraged to develop evaluation plans—tailored to their local context and evaluating their specific activities—as part of a coordinated effort to demonstrate the progress towards and impact of plan objectives. As stakeholders develop their evaluation plans they should remember that there is a wide range of data currently collected in a variety of ways which cover a significant segment of South Dakota's population. Stakeholders should identify ways to maximize utilization of existing data sources before they establish new data collections.

Specific evaluation activities should assess the short-term, intermediate, and long-term effectiveness of this strategic plan in meeting plan objectives and any corresponding future Healthy People 2020 Objectives. Evaluations should include plans for dissemination of results to ensure utilization and knowledge development throughout South Dakota. The subsequent information in this chapter can help inform the development of evaluation plans and enhance the quality of evaluation surrounding plan objectives.

Evaluation Defined

Program evaluation is the systematic assessment of activities, processes, and/or outcomes. Evaluation is intended to provide useful information to document the value of this plan, guide plan implementation and management, facilitate plan improvement, identify best practices, demonstrate accountability, and lead to learning opportunities.

Standards of Evaluation

The evaluations surrounding plan objectives should be conducted according to universally accepted standards of quality evaluation. These standards were established by the Joint Committee on Standards for Educational Evaluation in 1994 and serve as guidelines for CDC-funded and other public health evaluations.[37] The four groups of standards are:

- Utility Standards: An evaluation should be useful and its purpose clearly defined at the start of the evaluation process. Intended users of evaluation results should be included as stakeholders throughout the evaluation process.

- Feasibility Standards: An evaluation plan should be feasible and realistic given factors such as evaluation cost, needs, and political support for different activities.

- Propriety Standards: Evaluation strategies must be legal, ethical, and thoughtful of the welfare of those involved and those affected. This includes ensuring the rights of human subjects, avoiding conflict of interest (real or perceived), and developing policies for disclosure of evaluation findings.

- Accuracy Standards: Data accuracy is related to the credibility of evaluation results. Accuracy standards support the use of data sources (both qualitative and quantitative) that provide valid and reliable evaluation results, while recognizing that trade-offs in accuracy may be required in order to meet the other groups of standards.

Evaluation Steps

The four groups of standards are at the core of the CDC Evaluation Framework and guide the performance of each of its six steps.[37] The six steps of the framework are:

Step 1. **Engage Stakeholders:** Key evaluation stakeholders include those who will use the results of an evaluation. The involvement of such stakeholders throughout the evaluation process promotes their support of the evaluation activities and increases the likelihood that evaluation results will be used.

Step 2. **Describe the Program:** A current, thorough description of the activity or objective to be evaluated is the foundation for evaluation design. A logic model may be a useful way to describe an activity or objective and a series of logic models may be helpful in expanding the detail of elements to be evaluated.

Step 3. **Focus the Evaluation Design:** An evaluation design begins with the identification of the evaluation purpose(s). Specific evaluation questions are developed and prioritized. Data needed to answer each question are identified. Focusing the evaluation design involves developing an evaluation plan that includes a description of methods for data collection, analysis and interpretation; and a plan for dissemination of evaluation results.

Step 4. **Gather Credible Evidence:** Data are gathered in accordance with the evaluation plan developed in Step 3. Adjustments to the evaluation plan may be necessary and the Evaluation Standards serve as the guideposts.

Step 5. **Justify Conclusions:** The assessment process includes analysis and synthesis of information, interpretation of results, and development of recommendations for improvement and priorities. The reasoning that supports evaluation conclusions should be clear and explicit.

Step 6. **Ensure Use and Share Lessons Learned:** To ensure that the findings from the evaluation are used and that lessons learned are acted upon, evaluation results should be shared with stakeholders. This may include active dissemination using multiple methods and formats suitable to different audiences.

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